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VOL. XVIII. NO. 19.

OCT. 1, 1890.

PEACE ON EARTH
GOOD WILL TOWARD MEN



GLEANNING
IN

BEE CULTURE

DEVOTED
TO
BEEKEEPING

& HOME INTERESTS.

MEDINA, OHIO
BY
A. ROOT

TERMS, ONE DOLLAR PER YEAR.

SW Conrad
\$1.00

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U. S. DEPT. OF AGRICULTURE

ADVERTISEMENTS.

We require that every advertiser satisfy us of responsibility and intention to do all that he agrees, and that his goods are really worth the price asked for them. Patent-medicine advertisements, and others of a like nature, can not be inserted at any price.

Rates for Advertisements.

All advertisements will be inserted at the rate of 20 cents per line, Nonpareil space, each insertion: 12 lines of Nonpareil space make 1 inch. Discounts will be made as follows:

On 10 lines and upward, 3 insertions, 5 per cent; 6 insertions, 10 per cent; 9 insertions, 15 per cent; 12 insertions or more, 20 per cent; 24 insertions or more, 25 per cent.

On 48 lines (½ column) and upward, 1 insertion, 5 per cent; 3 insertions, 10 per cent; 6 insertions, 15 per cent; 9 insertions, 20 per cent; 12 insertions, or more, 25 per cent; 24 insertions or more, 33½ per cent.

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No additional discount for electrotype advertisements.

A. I. ROOT.

CLUBBING LIST.

We will send GLEANINGS—

With the American Bee-Journal, W'y	(\$1.00)	\$1.75
With the Canadian Bee Journal, W'y	(75)	1.65
With the Bee Hive,	(30)	1.20
With the Bee-Keepers' Review,	(50)	1.40
With the British Bee-Journal,	(1.50)	2.40
With all of the above journals,		5.40
With American Apiculturist,	(75)	1.70
With Bee-Keepers' Advance and Poultryman's Journal,	(50)	1.45

With American Agriculturist,	(\$1.50)	2.25
With American Garden,	(2.00)	2.60
With Prairie Farmer,	(1.50)	2.35
With Rural New-Yorker,	(2.00)	2.90
With Farm Journal,	(50)	1.20
With Scientific American,	(3.00)	3.75
With Ohio Farmer,	(1.00)	1.90
With Popular Gardening,	(1.00)	1.85
With U. S. Official Postal Guide,	(1.50)	2.25
With Sunday-School Times, weekly,	(1.50)	1.75
With Drainage and Farm Journal,	(1.00)	1.75
With Illustrated Home Journal,	(1.00)	1.35
With Orchard and Garden,	(50)	1.40
With Cosmopolitan, (new sub. to Cos.)	(2.40)	2.40

[Above Rates include all Postage in U. S. and Canada.]

NEW FACTORY.

We will soon be in our new factory, which will be the largest and most complete in the world. We shall make the best of goods at lowest prices. We are ready for contracts for next season's supplies. Write us.

G. B. LEWIS & CO.,

17-tfdd

WATERTOWN, WIS.

Cash for Beeswax!

Will pay 25c per lb. cash, or 23c in trade for any quantity of good, fair, average beeswax, delivered at our R. K. station. The same will be sold to those who wish to purchase, at 31c per lb., or 35c for best selected wax.

Unless you put your name on the box, and notify us by mail of amount sent, I can not hold myself responsible for mistakes. It will not pay as a general thing to send wax by express.

A. I. ROOT, Medina, Ohio.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per annum, when given once a month, or \$4.00 per year if given in every issue.

Untested Queens

FOR \$1.00 FROM JULY 1ST TILL NOV. 1ST.

Names inserted in this department the first time without charge. After, 21c each insertion, or \$2.10 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delays as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. 1st wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.

*H. H. Brown, Light Street, Col. Co., Pa. 7tfdd90

*Paul L. Viallon, Bayou Goula, La. 7tfdd90

*S. F. Newman, Norwalk, Huron Co., O. 7tfdd90

C. C. Vaughn, Columbia, Tenn. 9tfdd90

Wm. L. Ashe, Edwardsville, Mad. Co., Ill. 9tfdd90

J. M. Jenkins, Wetumpka, Ala. 9tfdd90

*Oliver Hoover & Co., Snyderstown, Northumberland Co., Pa. 17tfdd90

D. A. McCord, Oxford, Butler Co., Ohio.

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.

P. L. Viallon, Bayou Goula, Iberville Par., La 7tfdd90

C. W. Costellow, Waterboro, York Co., Me. 7tfdd90

R. B. Leahy, Higginsville, Laf. Co., Mo. 9tfdd90

J. M. Jenkins, Wetumpka, Ala. 9tfdd90

W. T. Falconer Mfg. Co., Jamestown, N. Y. 7tfdd

IF YOU WANT BEES

That will just "roll" in the honey, try **Moore's Strain of Italians**, the result of eleven years' careful breeding. Reduced prices: Warranted queens, 81c each; 3 for \$2.00. Select tested queen (this season's rearing), \$1.50. Safe arrival and satisfaction guaranteed. Those who have never dealt with me, I refer to A. I. Root, who has purchased of me, during past ten years, 415 queens.

J. P. MOORE, Morgan, Pendleton Co., Ky.
13tfdd Money-order office, Falmouth, Ky.

Please mention this paper.

NOW FOR A BARGAIN.

I will sell cheap my entire stock of good Italian bees, one honey-extractor, and all my bee-fixtures; and if sold soon will sell the honey also, as I wish to retire from the business. **MRS. REBECCA KINNEY,**
16 19db Bloomsburg, Col. Co., Pa.

In responding to this advertisement mention GLEANINGS.

FOR LIGHT AND DARK FERRETS,

and pure Poland-China Swine, address

N. A. KNAPP,
Rochester, Lorain Co., O.

In responding to this advertisement mention GLEANINGS.

1890 ITALIAN QUEENS FOR BUSINESS.

18tfdd

W. H. LAWS, Lavaca, Ark.

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Kind Friends!

I have now caught up from my delay caused by my illness. If weather permits, I shall have a few more queens for sale. I now have almost full control of the drones; others all dead; guarantee every queen mated to Italian drones. Drop me a card, telling me how many you can use, and pay on arrival of queens. Only untested and virgins, \$1.00 and 50 cts. each. Write quick. I will not promise to send one, therefore I do not ask pay in advance.

JACOB T. TIMPE,

Grand Ledge, Mich.

19d In responding to this advertisement mention GLEANINGS.

SCOTCH RABBITS. Will sell a few gray Scotch rabbits, Samuel Wilson's strain, at \$3.00 per pair. Order quick if you want any. 19tfdb
E. HOSTETLER, East Lynne, Mo.

FOR SALE.

A home of 3 acres; well set to all kinds of fruit, and bearing; box house, 3 rooms; 37 colonies of bees in S. hive. Price, four hundred. Richest of land.
19d D. H. WELCH, Vineland, Douglass Co., Kan.

50 COLONIES OF BEES FOR SALE,

In ten-frame Langstroth hives, \$3 per colony. Have plenty of honey to winter on. Also a lot of bee-supplies.
JOHN CROMBIE, Columbus, Wis.

Bee-Keepers' Supplies.

WHY * SEND * LONG * DISTANCES ?

SEND NAME ON POSTAL CARD FOR MY
NEW PRICE LIST TO

C. P. BISH, Grove City, Mercer Co., Pennsylv'a.

Formerly of St. Joe Sta., Butler Co., Pa.

ESTABLISHED IN 1884.


Please mention this paper.

9tfdb

NOW is the time to set **STRAWBERRIES** for next year's fruiting. Write for fall price list of plants and Secrets of Success in Growing Small Fruits; sent free, on application to I. A. WOOLL, 16tfdb
Elsie, Mich.

ERTEL'S VICTOR
SMIPPED ANYWHERE TO OPERATE
ON TRIAL AGAINST ALL OTHER
MAY BE PRESSES

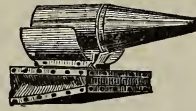
HAY PRESS
PURCHASER TO KEEP ONE
DOING MOST AND BEST WORK
MAY BE PRESSES



GEO. ERTTEL & CO. QUINCY, ILL.

19 In responding to this advertisement mention GLEANINGS.

BEST ON EARTH



ELEVEN YEARS
WITHOUT A
PARALLEL, AND
THE STAND-
ARD IN EVERY
CIVILIZED
COUNTRY.



Bingham & Hetherington
Patent Uncapping-Knife,
Standard Size.

Bingham's Patent Smokers,

Six Sizes and Prices.

Doctor Smoker, 3½ in., postpaid	...	\$2.00
Conqueror " 3 "	...	1.75
Large " 2½ "	...	1.50
Extra (wide shield) 2 "	...	1.25
Plain (narrow " 2 "	...	1.00
Little Wonder, 1½ "65
Uncapping Knife.....	...	1.15

Sent promptly on receipt of price. To sell again, send for dozen and half-dozen rates.

Milledgeville, Ill., March 8, 1890.

SIRS:—Smokers received to-day, and count correctly. Am ready for orders. If others feel as I do your trade will boom. Truly, F. A. SNELL.

Vermillion, S. Dak., Feb. 17, 1890.

SIRS:—I consider your smokers the best made for any purpose. I have had 15 years' experience with 300 or 400 swarms of bees, and know whereof I speak. Very truly, R. A. MORGAN.

Sarabsville, Ohio, March 12, 1890.

SIRS:—The smoker I have has done good service since 1883. Yours truly, DANIEL BROTHERS.

Send for descriptive circular and testimonials to
19tfdb BINGHAM & HETHERINGTON, Abnoria, Mich.
19 In responding to this advertisement mention GLEANINGS.

DADANT'S FOUNDATION

Is kept for sale by Messrs. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; O. G. Collier, Fairbury, Neb.; G. L. Tinker, New Philadelphia, O.; E. Kretschmer, Red Oak, Ia.; P. L. Viallon, Bayou Goula, La.; Jos. Nysewander, Des Moines, Ia.; C. H. Green, Waukesha, Wis.; G. B. Lewis & Co., Watertown, Wisconsin; J. Mattson, Atwater, Ohio, Oliver Foster, Mt. Vernon, Iowa; C. Hertel, Freeburg, Illinois; Geo. E. Hilton, Fremont, Mich.; J. M. Clark & Co., 1517 Blake St., Denver, Colo.; Goodell & Woodworth Mfg. Co., Rock Falls, Ill.; **E. L. GOULD & Co., Brantford, Ont., Can.**; R. H. Schmidt & Co., New London, Wis.; J. Stauffer & Sons, Nappanee, Ind.; Berlin Fruit-Box Co., Berlin Heights, O.; E. R. Newcomb, Pleasant Valley, N. Y.; L. Hanssen, Davenport, Ia.; C. Theilman, Theilmanton, Minn.; G. K. Hubbard, Fort Wayne, Ind.; T. H. Strickler, Solomon City, Kan.; E. C. Eaglesfield, Berlin, Wis.; Walter S. Pouder, Indianapolis, Ind., and numerous other dealers.

LANGSTROTH on the HONEY-BEE,
REVISED.

The Book for Beginners, the Most Complete Text-Book on the Subject in the English Language.

Bee-veils of Imported Material, Smokers, Sections, Etc.

Circular with advice to beginners, samples of foundation, etc., free. Send your address on a postal to
4tfdb

CHAS. DADANT & SON,

HAMILTON, HANCOCK CO., ILLINOIS.

19 In responding to this advertisement mention GLEANINGS.

MONMOUTH, JESSIE, and MAY KING
strawberry-plants; only 50c per 100, or \$4.00 per thousand.
S. F. REED, N. Dorchester, N. H. 18d

Wants or Exchange Department.

WANTED.—To exchange pure-bred poultry for white extracted honey. Select breed you want from my circular (sent free) and mail sample of honey. S. P. YODER, East Lewistown, O. 17tfdb.

WANTED.—I will exchange sewing-machines, new, and fruit-trees, for honey. Address 15-24db E. PETERMAN, Waldo, Wis.

WANTED.—To exchange all kinds of wall paper, for honey. 1tfdb J. S. SCOVEN, Kokomo, Ind.

WANTED.—Honey in exchange for supplies or cash; must be cheap. F. C. ERKEL, LeSueur, Minn. 18-19d

WANTED.—To exchange full colonies of bees for apiarian supplies of every description, or for automatic section-machine. W. H. PUTNAM, 18tfdb Supply-dealer, River Falls, Wis.

WANTED.—To exchange National Safety Bicycle, ball bearing, cost \$75.00 when new; used one season; will take white-clover honey, extracted, or offers. E. C. ELVER, Mt. Horeb, Wis. 18-19d

WANTED.—To exchange all kinds of nursery stock, peaches, pears, grapevines, raspberries, strawberries, etc., for foundation, beeswax, empty combs, or offers. Address T. G. ASHMEAD, Williamson, N. Y.

WANTED.—To exchange Ply. Rock fowls, fine stock, for a lot of empty L. combs for extracting, or offers. T. G. ASHMEAD, Williamson, N. Y. 18tfdb

WANTED.—To exchange bee-hives for bees, will guarantee satisfactory hive. 18tfdb LOWRY JOHNSON, M'F'r, Masontown, Fay. Co., Pa.

WANTED.—To exchange a Given foundation press for white extracted honey. 18tfdb J. M. ROOD, Dryden, Lapeer Co., Mich.

SITUATION offered to a competent wood worker who thoroughly understands the manufacture of bee-hives, one-pound sections, etc. Address with references, W. H. PUTNAM, River Falls, Wis. 18tfdb

WANTED.—To exchange apiary of 150 colonies of bees. Will take any kind of farm stock, goods or groceries. ANTHONY OPP, Helena, Ark.

WANTED.—To exchange a 200-egg Excelsior incubator, used one season; cost \$25.00, for photographic outfit, books, or best offers. 19-20-21d O. S. COMPTON, Glenwood, Cass Co., Mich.

WANTED.—To exchange a fine 2-year old registered Jersey bull, for extracted or comb honey, or offers. 19-20d B. T. BALDWIN, Marion, Ind.

WANTED.—To exchange two good cornets for extracted honey. Write for particulars to R. H. BARTON, 467 Water St., Bridgeport, Conn.

WANTED.—To exchange one steam honey-evaporator, and one 240-egg incubator, for good, sound double work harness (medium weight), side saddle, single harness, one-piece sections, S. hives in flat, or offers. S. B. SEAMAN, Harford Mills, Cortland Co., N. Y.

WANTED.—To exchange a 6x9 self-inking press, an excellent outfit; cost me \$80.00; four fonts of type. 19-20d L. L. ESENHOWER, Reading, Pa.

WANTED.—To correspond with parties having potatoes, onions, apples, and honey for sale. Prompt attention given to correspondence. Consignments solicited. Prompt returns made. EARLE CLICKINGER, 121 So. 4th St., Columbus, O.

WANTED.—To exchange highly polished Wisconsin pearl shells, for honey, small-fruit plants, or offers. P. H. FELLOWS, Broadhead, Wis.

WHO has bees to trade for 100 acres of fine bottom land with plenty of timber in Illinois? Will trade a part or all, and give a bargain. Title perfect. J. B. ALEXANDER & Co., Hartford City, Ind.

WANTED.—A few pairs nice ferrets. Will exchange fine Italian bees or pay cash. CHAS. MCCLAVE, New London, Ohio.

WANTED immediately.—A man to take entire control of 150 colonies of bees. For particulars address 10-20d S. A. SHUCK, Liverpool, Ill.

WANTED.—To exchange new Dibbern tin bee-escapes, brood-frames or hives, for empty combs (either L. or Heddon frame), foundation, or any other supplies. Write E. F. QUIGLEY, 19-20d Unionville, Putnam Co., Mo.

WANTED.—Dry basswood plank. W. D. SOPER & Co., Jackson, Mich.

WANTED.—To exchange Italian bees in L. hives, for two well-trained fox-hounds. Apply at once to J. B. MITCHELL, Hawkinsville, Pulaski Co., Ga. 19-20d

THE CANADIAN

Bee Journal Poultry Journal

Edited by D. A. Jones. Edited by W. C. G. Peter.

75c. Per Year.

75c. Per Year.

These are published separately, alternate weeks, and are edited by live practical men, and contributed to by the best writers. Both Journals are interesting, and are alike valuable to the expert and amateur. Sample copies free. Both Journals one year to one address \$1. Until June 1st we will send either Journal on trial trip for 6 months for 25 cts.

The D. A. Jones Co., Ltd., Beeton, Ont.
Please mention GLEANINGS. 6-11db

TAKE NOTICE!

BEFORE placing your Orders for **SUPPLIES**, write for prices on One-Piece Basswood Sections, Bee-Hives, Shipping-Crates, Frames, Foundation, Smokers, etc. Address

R. H. SCHMIDT & CO.,
21-20db NEW LONDON, Waupaca Co., WIS.
In responding to this advertisement mention GLEANINGS.

HOME EMPLOYMENT.—AGENTS wanted every where, for the HOME JOURNAL—a grand family paper at \$1 a year. Big cash premiums. Sample FREE. THOS. G. NEWMAN & SON, 246 East Madison Street. - CHICAGO, ILLS.

MUTH'S HONEY - EXTRACTOR, SQUARE GLASS HONEY-JARS,

TIN BUCKETS, BEE-HIVES, HONEY-SECTIONS, &c., &c.
PERFECTION COLD-BLAST SMOKERS.

Apply to CHAS. F. MUTH & SON,
Cincinnati, Ohio.
P. S.—Send 10-cent stamp for "Practical Hints to Bee-keepers." Mention Gleanings. 1tfdb

SECTIONS! SECTIONS! SECTIONS!

On and after Feb. 1, 1890, we will sell our No. 1 V-groove sections, in lots of 500, as follows: Less than 2000, \$3.50 per 1000; 2000 to 5000, \$3.00 per 1000. Write for special prices on larger quantities. No. 2 sections at \$2.00 per 1000. Send for price list on hives, foundation, cases, etc.

J. STAUFFER & SONS,
16 tfdb Successors to B. J. Miller & Co.,
Nappanee, Ind.
In responding to this advertisement mention GLEANINGS.

CONVENTION NOTICE.

The Missouri State Bee-Keepers' Association will meet in convention at Mexico, Mo., Oct. 22 and 23. A good programme, and an instructive and interesting time is expected. All persons interested in bee culture are cordially invited to attend. Board can be obtained for 75 cts. per day, or 20 cts. per meal.

J. W. ROUSE, Sec., Mexico, Mo.

KIND WORDS FROM OUR CUSTOMERS.

WHAT THEY SAY OF THE A B C OF STRAWBERRY CULTURE.

It is an excellent little manual.

H. GEO. COMEY, Ed. Orchard and Garden.
Little Silver, N. J., Sept. 22.

The *New England Farmer* of this week says:

The book contains a vast amount of practical information, being just exactly what is needed, and it should have large sales.

It adds another to the valuable works that you are publishing, and is a nice work, full of information, worth many times the money asked for it.
Hamilton, Ill., Sept. 18. DADANT & SON.

I like the work so much that I propose to print almost no introduction in my catalogues hereafter, but refer my customers to your book—or Mr. Terry's—to find out how to grow strawberries.
Cuyahoga Falls, O., Sept. 15. M. CRAWFORD.

My strawberry-fever burned out some years ago, and you know it is not easy to communicate such ailments the second time; but I enjoy the interesting little book all the same. EMERSON E. HASTY.
Richards, O., Sept. 18, 1890.

We have not a great many works on the strawberry; and having had a good deal of practical experience in growing strawberries for family use and the market we do not hesitate to recommend the recent work, "A B C of Strawberry Culture," by T. B. Terry and A. I. Root. The volume is handsomely bound, and contains 150 pages attractively illustrated.—*Tennessee Farmer*.

"A B C of Strawberry Culture" is the title of a neat little book of 148 pages which contains the experiences of T. B. Terry and A. I. Root, in the pleasant and profitable work of growing this popular fruit, the strawberry. Those who are acquainted with Mr. Terry's success in this branch of horticulture will wish the book; and those who are not, should get the book to find out how he attained his success.—*Farm, Field, and Stockman*.

OUR STRAWBERRY-PLANTS.

The plants arrived on the 20th in good condition. I have never before seen such good roots on young plants.
Medford, N. J., Sept. 22. E. A. TAYLOR.

I received the strawberry-plants in splendid order. We had three days of rain on them, and not one of 1200 wilted.
Clifford, Ind., Sept. 13, 1890. W. H. BUTLER.

The strawberry-plants came O. K., and are as fine as I ever saw, and very nicely packed. As I unwrapped them it seemed to me as though I could almost taste their fruit, and that night I dreamed of eating strawberry shortcake. G. W. DAVIS.
Pine Creek, Mich., Sept. 8.

The queen-cages are exceedingly nice, and show what nice work can be done with accurate machinery.
Morgan, Ky., Aug. 25. J. P. MOORE.

DOVETAILED HIVE: BEST SECTION-HOLDER A SUCCESS.

I consider your Dovetailed hive the best and most convenient one I ever used. I bought some from Mr. J. D. West, that he got of you last spring. The sections come out of the supers the easiest of any I ever used.
Morris X Roads, Pa., Sept. 1. R. W. HIGINBOTHAM.

Goods received O. K. I am well pleased with them all.
Harris, Minn., Sept. 2, 1890. L. J. STARK.

I want your valuable journal continued as long as it retains its present tone and usefulness. I differ with you denominationally, but we will meet all true followers of the one Christ over there, I hope.
Phalia, Miss. F. GENTRY.

OUR SOLAR WAX-EXTRACTOR.

The solar wax-extractor, bought of you this spring by T. G. Newman is a perfect success in every particular. It just does the work nicely.
DeKalb, Ill., June 18. A. Y. BALDWIN.

ALFALFA HONEY.

Our alfalfa honey came in splendid order, and is pronounced excellent. I was very curious to taste alfalfa, and glad when I found the shipment was of it. Now I am delighted with it, and prefer it to white clover for my own use. That peculiar flavor is delicious.
Ligonier, Pa., Aug. 26. MRS. JAS. M. DAVIS.

MORE ADVERTISING THAT PAID.

During the last few days, orders came in so heavy that I found I should be all out, but did not realize it in time to write you sooner. I can not fill a third of the orders I am now receiving from my advertisement.
Adrian, Mich., Sept. 13. D. G. EDMISTON.

ARRIVED IN SPLENDID SHAPE.

The queen came to hand in splendid shape, lively as a cricket, and I have got her in the hive in good shape.
Marshfield, Oreg., July 5. GEO. A. GOULD.

THE CANDY PLAN A SUCCESS.

The queen I sent for some time ago came to hand in good shape, and was safely introduced by the candy plan. Thanks for sending such a fine one.
Alliance, O., Sept. 1. CURTIS E. BOWMAN.

THE TESTED AND UNTESTED QUEEN.

The tested queen shipped Sept. 5 came all right, and she is in the hive safe. She is a beauty. You sent me one untested queen in July. I placed her in a hive that was nearly destroyed by worms, and I have now the finest hive of bees I ever saw in my life.
Richwood, O., Sept. 15. C. W. HUFFMAN.

A GOOD TESTIMONIAL FOR BINGHAM SMOKERS.

The Bingham smokers I received last year, as well as the soldering-iron and grindstone, have been very satisfactory. The smoker has done very much in the line of quieting the bees, and I would not be without one of the Bingham's, since I tried them. Frank Benton told me, years ago, about their excellence, but I did not think so very much of it till I tried it myself. I handed one over to my brother, and worked with one myself. The smoker is working well; but I am afraid our Arabs have not always the most careful hands; they might get spoiled, so I had better have a few on hand.

PH. J. BALDENSPERGER.
Jaffa, Palestine, Aug. 21, 1890.

FURTHER PARTICULARS FROM W. S. HART'S APIARY.

I was greatly surprised to find the engraving of my photograph, sent you a short time ago. I sent it, as I thought it quite a pretty picture, and one that would interest you. I am pleased to have it in GLEANINGS, and especially so since it is so excellently well done. I am not an expert judge of such work, but it seems to me that it is one of the best engravings that I ever saw. The hives, as you suggest, though not the Simplicity, are much like them; and when making my first one I embodied a good many features of that hive. I claim no merit for my hive over the Simplicity, except that it was a little easier for me to construct with the tools at hand. It takes the L. frame, the best of all for extracted-honey production in this State. The ground is kept clean under the trees and about the hives, only by the vigorous use of the hoe every little while through the summer. Vegetation grows rank in the summer, but in the winter the ground will remain quite clean for weeks after a hoeing.

Bradford, N. H., Sept. 8. W. S. HART.

HONEY COLUMN.

CITY MARKETS.

ALBANY.—Honey.—We have received up to date, 463 cases of comb and 40 packages of extracted honey. Fancy clover continues scarce, and we have made sales of 1-lb. sections as high as 18 cts. Medium grade clover sells at 14@16c. Buckwheat, 1-lb. sections, 12@13; 1½ to 2 lb. sections, 10@12. We never knew the demand so good for extracted at this early date. We quote 7@10.

Sept. 20.

CHAS. McCULLOCH & Co.,
339 Broadway, Albany, N. Y.

KANSAS CITY.—Honey—The demand for comb honey still continues good, and the supply still continues light. We quote choice white 1-lb. sections at 16@18; choice light, 1-lb. comb at 14@16; dark, 10@12. Extracted, white, 6@7; dark, 5@6.—*Beeswax*, 25.

Sept. 20.

CLEMONS, MASON & Co.,
Kansas City, Mo.

CINCINNATI.—Honey.—There is a good demand for all kinds of honey. Arrivals are fair. We quote choice comb honey at 14@16 in the jobbing way. Extracted, 5½@8 on arrival. *Beeswax* is in good demand at 24@26 on arrival, for good to choice yellow.

Sept. 22.

CHAS. F. MUTH,
Cincinnati, Ohio.

St. LOUIS.—Honey.—There is no appreciable change in the market. Comb is scarce, with good demand; but it must be light to bring top prices. We are very nearly cleaned out of extracted. *Beeswax*, prime, 27.

Sept. 19.

D. G. TUTT GRO. Co.,
St. Louis, Mo.

COLUMBUS.—Honey.—Comb honey selling at 18 cts. for choice white clover. Market is active, and well cleaned up. All shipments of choice goods meet with ready sale.

Sept. 18.

EARLE CLICKENGER,
Columbus, Ohio.

BOSTON.—Honey.—We quote best white clover, 1-lb. sections, 17@18; 2-lb., 15@16. Extracted, 7½@9. No beeswax on hand.

Sept. 20.

BLAKE & RIPLEY,
Boston, Mass.

DETROIT.—Honey.—There is no white comb honey in the market, and fall honey is selling at 13@14c. Extracted, 7@8.—*Beeswax*, 26@27.

Sept. 10.

Bell Branch, Mich., Sept. 19. M. H. HUNT.

NEW YORK.—Honey.—Fancy white, in 1-lb. sections, 17@18; fair to good, 14@17; fancy, 2-lb., 14@15; fair to good, 13@14; fancy buckwheat, 1-lb., 12@13; 2-lb., 10@11. Extracted, white clover, 8½@9; buckwheat, 6½@7.

Sept. 10.

CHAS. ISRAEL & BRO.,
110 Hudson St., N. Y.

FOR SALE.—5000 lbs. well-ripened extracted honey, in 60-lb. cans. C. H. STORDOCK, Durand, Ill. 18-23db

FOR SALE.—1200 lbs. extracted clover honey, in 60-lb. cans, at 10 cts. here.

R. H. BAILEY, Box 81, Ausable Forks, N. Y.

FOR SALE.—400 lbs. choice white-clover honey in 2-lb. sections; will pack in 24-lb. cases, crated to suit purchaser. I want 16 cts.; delivered at R. R.

Wm. VAN AUKEN, Woodville, Jefferson, Y.

FOR SALE.—1000 lbs. white alfalfa comb honey, in 12-lb. cases, at 16c per lb.; also 4000 lbs. extracted, very fine, in 7½-lb. cans, at 10c per lb.

19-22db

J. T. CLAPP, Supt. Denver Land Co.,
Broomfield, Boulder Co., Colo.

FOR SALE.—1000 lbs. of buckwheat comb honey, in 1-lb. sections.

19-20d

D. F. LASHIER,
Hooper, Broome Co., N. Y.

FOR SALE.—50 one-gal. tin cans of white clover extracted honey; very fine and white, beginning to granulate some. I want 10 cts. per lb. here.

G. L. JONES, Grand Ridge, LaSalle Co., Ill.

FOR SALE.—25,000 lbs. of the very finest honey, in scant 1 lb. sections; put up in white basswood cases, holding 12 sections. A very fancy lot. The price is 20c per lb. on board cars here. Who wants the lot? Address L. W. BALDWIN & SON, Independence, Mo. 19tfdb

WANTED.—One or two thousands pounds of nice comb honey. Write, giving amount on hand and price wanted. A. D. ELLINGWOOD, Berlin Falls, N. H. 17tfdb.

WANTED.—White comb and extracted honey; state price, package, etc. B. WALKER, 17tfdb
Capac, Mich., or Prairie du Chien, Wis.

FOR SALE.—50,000 lbs. of extra fine sage honey in 60 lb. tin cans. Also two carloads of light amber honey, for sale at 6c per lb., f. o. b.
L. E. MERCER & SONS, Ventura, Ventura Co., Cal. 19tfdb

CHOICE
HONEY
FOR SALE
CHEAP
ADDRESS

JAMES HEDDON, DOWAGIAC, MICH.
In responding to this advertisement mention GLEANINGS.

NEW FIRM.
W. D. SOPER & CO.

We are now in shape to manufacture every thing needed in the apiary. Hives, sections, packing-boxes, etc., made to order. Get our prices before buying elsewhere. W. D. SOPER & CO.,
118 & 120 Washington St., Jackson, Mich.

In responding to this advertisement mention GLEANINGS.

DON'T SPEND AWH YOUR MONEY

Before reading this: 12 Red Raspberries, 60; 12 Blackberries, 85c; 12 Currants, 70c; 12 Gooseberries, 90c; 12 Grapevines, 3 kinds, Concord, Brighton, Niagara, \$1.60; Lilium Harris, the true Bermuda Easter Lily, fine large bulbs, 30, 50, and 75c. All free by mail. Catalogue free.

THEODORE JENNINGS,
Box 69, Port Chester, N. Y.

In responding to this advertisement mention GLEANINGS.

Black and Hybrid Queens For Sale.

I have 30 nice hybrid and 35 young black queens for sale. Send me 50c and get one of them.
16-17-18d A. D. ELLINGWOOD, Berlin Falls, N. Y.

Six hybrid queens at 25 cts each; these queens are young and extra prolific; three of them produce bees that show about all the markings of pure Italians.

L. B. SMITH,
Cross Timbers, Johnson Co., Texas.

CONVENTION NOTICES.

The next convention of the York and Cumberland Bee-keepers' Association will be held at Goodwins Mills, Me., Oct. 18, 1890. All persons interested are invited.
Waterboro', Me., Sept. 20, 1890. C. W. COSTELLOW, Sec'y.

The 23d semi-annual session of the Central Michigan Bee-keepers' Association will meet in Pioneers' Room, Capitol, Lansing, Mich., on Wednesday, Oct. 15. Everybody interested, come. Ladies are cordially invited to attend.
(Grand Ledge, Mich. W. A. BARNES, Sec'y.



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SOME QUESTIONS IN REGARD TO CYPRIANS AND SYRIANS.

DOOLITTLE'S EXPERIENCE IN REGARD TO A CLEANSING FLIGHT IN THE WINTER TIME.

Several questions have been sent in for me to answer; and as the most of them are appropriate for this time of year, I will, with your permission, Mr. Editor, answer them through the columns of GLEANINGS, answering them by number.

1. "Can Cyprian and Syrian bees be distinguished, by their color or markings, from the Italian bee or from each other?"

Well, that depends whether the asker of the question is expert in detecting nice colorings; whether he is a close observer, and whether he has had large experience with the different races named. The claim was originally put forth, that the Cyprian bee had a shield between its wings, of the same color as the golden bands on the abdomen, and that, as no other bee had this shield, it was therefore easy to distinguish the Cyprian race from that of any other. However, it was soon found out that the best specimens of Italians showed this shield fully as plainly as do the Cyprians, so that claim went for naught. Candidly, I do not know that I could tell a beginner how he could tell these races of bees apart, were there nothing but the coloring of each to go by. The yellow on the Syrian is of a little darker or duller shade than that of the Italian, while the same color on the Cyprians is of a brighter orange than that of the Italian, and much more so than that of the Syrian. This I say of them in their purity—not when they are considerably mixed with "blood" from each other, as is quite apt to be the case. When thus mixed, the best authorities are so badly puzzled that it is no wonder the above question was asked by one not thoroughly posted.

2. "Do the Cyprians and Syrians rear more brood than the Italians?"

Yes, as a general rule they do. The Cyprians, in my opinion, would be an acquisition, were it not for their vindictiveness, which is so great that it can not be tolerated. They commence breeding more profusely, early, than any other bee with which I am acquainted, thus getting many bees on the stage of action just in the right time for the white-clover honey harvest; while when the harvest is well under way they rear no more brood, to become useless consumers, than do the Italians. I never parted with any thing in the bee line with more reluctance than I did with the Cyprian bee. The Syrians are very different in this locality, regarding brood-rearing, from either the Cyprians or the Italians. They do not begin rearing brood to much more than supply the waste of the hive till the honey harvest commences, when they go to brood-rearing on the most extensive scale, this brood consuming the larger part of the honey gathered by the few bees they have at the beginning of the harvest; while this brood, after it has hatched into bees, becomes a consumer of the little honey they did not consume while in the brood form. I had from two to six Syrian colonies of bees for four years, and each fall I had to give them nearly all of their winter stores in the shape of frames of sealed honey taken from my Italian colonies. During this time I succeeded in taking about 50 lbs. of inferior comb honey from them. Of all the bees I ever had in my apiary, the Syrians proved much the poorest. Some speak well of them, and I think that they might prove better than with me where the season is of long duration for honey.

3. "Some say that bees need a cleansing flight where wintered in the cellar; others say that such a flight is unnecessary. Which is right? I do not wish to carry mine from the cellar till time to set them out for good, unless it is actually necessary."

It used to be thought, by nearly all, that bees should be carried from the cellar on pleasant

days during the winter for a fly; but of late years most of our best apiarists believe this is of no special benefit. I used to carry mine out, up to about twelve years ago. At that time I commenced to experiment by so arranging in the fall that I could carry a part out without disturbing the rest; and when there came a warm day these were carried out, and the rest left undisturbed. The result proved that, on the whole, those not touched wintered a little better, if any thing, than did those taken out; consequently I have not carried a colony out of the cellar for a cleansing flight during the last ten years; only as two or three have been carried out and fed, as I feared they would starve before spring. Some say, "Leave them as long as they are quiet;" but my experience has been that there is nothing gained by carrying out the uneasy ones, should there be any such; for if they are going to die, carrying out for a flight does not seem to help them much if any.

4. "Would there be any injury to bees if placed in a cellar under a kitchen where there is lots of noise all winter?"

If the bees are so arranged that no jar comes to them, so far as my experience goes, noise does no harm. It is the jar that arouses bees in the winter, not noise without jarring. To illustrate: In sighting my rifle one pleasant winter day I fired it within eight feet of two or three hives of bees. Just before firing I listened at the entrance of these hives and heard the low hum of the bees which we always hear; but before I had fired ten shots these same bees were all in an uproar, many coming to the entrance. At the time I laid it to the noise; but thinking differently a few days afterward, I again fired the same number of shots 50 feet in front of the hives (the first having been fired in the rear), so that the noise might reach them at the entrance, and they were not disturbed in the least. I now fired at the same distance as at first, when they became agitated the same as before.

G. M. DOOLITTLE.

Borodino, N. Y., Sept. 16.

Friend D., we are exceedingly obliged to you for your answers on the above subjects. I believe we almost if not entirely agree with you in regard to Cyprians and Syrians.—In regard to the cleansing flight in winter time, I think the general decision is about as you give it. So many have testified to excellent wintering right under the kitchen, where there is lots of noise, we can not think the noise would be any objection, providing the hives rest on the ground, and the jar of the floor does not shake the hives.

CALIFORNIA.

THE NUISANCE OF ODD-SIZED FRAMES.

In my California letter on swarming I did not say any thing about the swarm that took an old oil-can for a home, nor the one that built in the hollow shell of an old pumpkin, nor yet of the one that came down the chimney into the fireplace below, to the astonishment of the family in the room. This last was down near the river, where there is more timber than here. Such are some of the wonders of California bees. They are put into all sorts of boxes for hives. Nail-kegs, barrels, and store-boxes I have seen used. Even where regular hives are made, they are made according to the size that the lumber will cut best for, more than to any regular or standard size. A dealer in supplies here showed

me his patterns for cutting foundation by; and how many do you think there were? About 30, I should say, though I did not count them. It is everywhere evident in California bee-keeping, that the bees are made to be secondary to other considerations. They are not valued here as they are in the East. The fixtures of an apiary, including hives, contain a larger per cent of the value of an apiary here than there. It is not so hard to increase here. Sulphuring, or killing bees, is often done to get the honey, where some one has taken a swarm or two in a box or keg some months before.

In the apiary we bought, we found about four sizes of frames for the same size of hive. The hives and frames were substantially made of good material, and would have been good property had the maker fortunately understood the proper size of a bee-space. I can say that I understood far better what the proper distance was before commencing with bees at all than the owner of this apiary did. I read the A B C book, and had the fundamental principles well fixed before commencing.

We found frames in our apiary that we could hardly push down between the waxy walls of the hive, and frames that stood away fully $\frac{3}{4}$ of an inch from the sides, and frames that did not come within more than an inch of the top of the ones below. The bees were obliged to build in between in order to crawl up on the upper frames, which made very bad work when removing a frame. I suppose Mr. Root wouldn't tolerate such frames for a day longer than absolutely necessary, and I am sure we will not, for they would drive us out of bee-keeping altogether. Buying and selling bees is much hindered here by the many sizes of hives used. The buying of bees usually means a transfer to your own size of frames, and there is not much selling in lots less than a whole apiary.

The average California bee-keeper is apt to "lump" things, as the expression is. If it is a good year he expects a good yield of honey; and if a poor one, he reasons that it doesn't make much difference. I can not say that the bee-men here are as progressive and intelligent as they might be. Among the large bee-keepers are men of fully equal capacity to those in other lines of business; but it seems to be resorted to sometimes as a make-shift way of getting a living. Perhaps I am wrong about this, and the neglected appearance of many California apiaries may be due to the fact that persons of small means take this way to procure a living, and stretch their capital to accomplish as much practical result as possible, so that the appearance is much neglected. Afterward these persons embark in other enterprises, and leave the apiaries in the hands of others just commencing business, so that no outlay is made in the way of taste and appearance. If the outward appearance of many apiaries and their surroundings were any index to the quality of the honey produced, I should not wonder that it brings a low price in the world's markets. Some one who could get up extracted honey as nicely as Mr. Terry does his strawberries would doubtless find it to pay. It is possible to cleanse oil-cans so that they are clean, and free from taint; yet carelessness in their use has doubtless done much to lower the quality of the California product.

BEEES AND FRUIT IN CALIFORNIA.

"Bees versus fruit" is a question I suppose you who are old bee-keepers have discussed until you hardly care to say any thing more about it. But it is all new to me; and when I saw the fruit of my neighbors covered with my bees I suppose I felt that there were at least two sides to the question. It is claimed by some here, that the bees eat into sound fruit to obtain the

juice. Others say that they take only injured fruit that birds have first worked on. I have taken neither view, but so far have only seen the little fellows run over the fruit, lapping with the wonderful appendage they have for taking honey, and not using the parts with which they uncap comb honey. I can see, however, that, by constantly taking away the juices, the dry substance of the fruit would soon shrink very much when unprotected by the film of dry juice that would otherwise form a covering over the injured part. In this way fruit melts away where there are many bees to keep the juices cleaned off, and the owner may reasonably attribute a loss to the agency of bees. My neighbors have been lenient in these matters, and refused to accept any thing for their losses. Yesterday, while picking figs I came to a white fig-tree that had a sound as of a swarm, because of the many bees that were working on the fruit. Grapes are worked on by them until only the shell or skin is left; but, as in the case of the figs, it is fruit that has begun to candy in the juices, and is not ripening perfectly. A mean between the entire prohibition of bees in fruit-districts and the putting of large apiaries in positions close to fruit-farms, especially where other locations will answer as well, would seem to be the right solution of this question. Where one man owns both bees and fruit there will never be any trouble, and there should not be in any case.

I was rather surprised to find honey in the hives, almost ready for another extracting. The bloom of most of the flowers is gone, and I did not suppose the bees were getting enough from the fruit to accumulate much stores. But I noticed that the bees working on fruit would get either such a large load, or the effects of the juices were such that they were hardly able to take wing, and seemed half drunken. I have caught the great steel-blue wasp, with scarlet wings, when it was working on fruit, as it seemed to lose fear. This wasp is over 2 inches long, and is very beautiful. There is alfalfa down in the valley, about three or four miles away, and I have hoped that our bees would find it, as it would help much in the present dearth of bloom on the high land. I am sending my honey home to my brother in Ohio; and there is satisfaction in thinking of my old neighbors and friends getting my honey to use. God bless them all, and draw them near to him with the bands of love.

The yield this year has not been as great as we at one time expected. We shall get about 40 or 45 cans in all, which is not a large yield from 70 hives. The white sage put forth multitudes of buds which did not mature into bloom. Had they done so, four apiaries like ours would not have kept them emptied of an ordinary honey deposit. But they failed, for lack of moisture, perhaps, and we are content with less than might have been. There has been fruit to work with and engage our time. God has been merciful, and we do not have a right to complain at all.

COMBS MELTING DOWN WITH HEAT.

We shaded our hives, as it is necessary to do here, and ours were in a low place where the sun struck strongly. An oil-box costing five cents made two shades. One very hot day while we were away in Los Angeles a hive melted down into a mass almost. It seemed to be because of a large stone that stood on the north side, and reflected the rays into the hive. The same day a man in the village who had but one hive (or box, rather), in which the bees built to the top inside, had it melt down by the heat of the sun.

Comb honey at 12½ cents, or nicely extracted honey sent to some friend in the East to sell,

will pay pretty well, I think, here in California, where so little capital is needed for an outfit. Retailers here charge well for handling any thing in the food line, though I can see that their margin is being lowered all the time. A year ago, grocers at Los Angeles sold honey, that cost them 12½ cents, at 20 cents. This year it is 15 cents at retail, as the style is to go 5 cents at a time, which is a relic of early days, when nothing less than 25 cents was accepted for *any* thing. Where one can dispose of his product direct to the consumer there is a good profit; but you can not well do this if you go back in the new districts away from the cities, where the best bee pasture is. But if near a small village or town, there may be a pretty smart local demand, as the majority of the people will be engaged in other lines of business, and may be willing to give you a better price right at home than you could obtain by sending to the large markets.

FLUCTUATION OF PRICES IN CALIFORNIA.

Prices fluctuate wonderfully here, especially on heavy articles like potatoes, which range from nothing up to 3 cents a pound. Every thing of food is sold by the pound, with the single exception, I think, of comb honey. Business does not move as steadily and systematically here as in the older East. There are more ups and downs. True courage and moral worth are recognized here as quickly as anywhere in the country. A man's clothes or his pedigree counts but little. They make a quick estimate of a man of what there is in him; and if he has good elements of character, and wants to do what is right, they seem quick to understand it, and reward it accordingly.

W. S. RITCHIE.

Sierra Madre, Cal., Sept. 8, 1890.

Friend R.: I remember vividly almost every point you make; and I thank you for your candid and honest statement in regard to the matter of bees and fruit. I noticed your concluding thought, that people in California make a quick estimate as to a man's real value. Fine clothes and plenty of money do not of themselves give him a place in society where other things are lacking. I expect to see California lead us in many things; and I hope and pray that it may be in placing a high estimate on the value of true Christianity.

THE FOUR CLASSES OF BEE-KEEPERS.

A PROPOSED 8-FRAME CHAFF HIVE: 8 VS. 10 FRAME L. HIVES, AGAIN.

Mr. Root:—Now that your great rush of business is over, and you have had a little time to rest and cultivate charity toward those that want "irregular supplies," I wish to make a suggestion of two, which I hope will result in adding a new(?) hive to the regular list.

First, let me say, in commendation of the chaff and Dovetailed hives, that, for the class of bee-keepers for which they are fitted they are the nearest perfect of any thing on the market. If we classify bee-keepers according to their method of wintering, considered in connection with the kind of honey produced, whether comb or extracted, we shall have the four classes suggested by the following headings:

1. Indoor wintering, comb honey.
2. Indoor wintering, extracted honey.
3. Outdoor wintering, extracted honey.
4. Outdoor wintering, comb honey.

The verdict of the leading honey-producers seems to be, that, for the production of comb

honey, the brood-nest should contain eight S. frames; and for extracted honey, ten. I believe this verdict is concurred with at the Home of the Honey-bees.

Upon the subject of outdoor wintering, there may be some diversity of opinion as to the superiority of the chaff hive; but there has been no uncertain sound in regard to the matter in the editorial teaching of GLEANINGS, as we have been repeatedly advised not to winter bees out of doors in Simplicities, but to lift frames and all into chaff hives.

Little has been said in regard to the wintering qualities of the Dovetailed hive, even by Ernest, who has been so enthusiastic over it in other respects. The senior editor has stated quite unreservedly, that he regards them inferior to Simplicities as a protection against cold, wind, and rain.

Now, the requirements are met for those that produce comb honey and winter indoors, by the eight-frame Dovetailed hive; for those that produce extracted honey, and winter indoors, by the ten-frame Dovetailed hive, and for those that extract and winter out of doors, by either the one or two story chaff hive; but according to your own teachings you make no hive that is adapted both to the production of comb honey and for outdoor wintering. I think I am safe in estimating that four-fifths of the ten thousand bee-keepers that subscribe for GLEANINGS belong to this unprovided-for class, and that they keep a larger number of colonies of bees, and produce more tons of honey, than any of the other classes—I was about to say, more than *all* the other classes.

If one of this class were to send you an order for hives suited to his needs, he would be charged extra for being "irregular;" and if during the busy season, he would be unable to get them at all.

All the preceding remarks have been only preliminary to the following suggestion: That the committee which designed the Dovetailed hive be re-assembled, and requested to give us an eight-frame one-story chaff hive that will take the eight-frame Dovetailed furniture above.

If this suggestion meets with favor, I should like to say something additional to the committee before this new(?) hive takes its final shape.

W. A. KING.

Marysville, O., Aug. 16.

Your classification of bee-keepers is very good; and while we have not yet hit the fourth class, as you suggest, directly, we have had it in mind; and the "committee," as you are pleased to call it, has been talking and arguing on an eight-frame chaff hive—that is, something that will be cheaper than our regular ten-frame, and yet answer the purpose fully as well. We have been experimenting along this line, but as yet have not said any thing in print, because it is better to test new things at the Home of the Honey-bees than to have beginners all over the land try something that we *think* may be all right, and yet which may ultimately prove after all a failure to them. Well, perhaps it will do no harm to tell what the eight-frame chaff hive is that we have in mind. Hundreds of bee-keepers have the eight-frame Dovetailed hive, and they may take a notion to winter outdoors either a half or all of their colonies, because the cellar, if they have one, is too damp, or because some other condition is not right. They have

the hives on hand, and desire to winter outdoors. Now, how shall we fix them up? If it is practicable, and subsequent experiments justify it, we propose putting on the market a winter case made of $\frac{3}{4}$ lumber, dovetailed at the corners. This case will be $\frac{3}{4}$ inches deeper and larger all round than the eight-frame Dovetailed hive, and it is to have a tin-roof cover. By dovetailing the corners we find we can make it of much lighter lumber, and we are also able at the same time to dispense with corner-posts. Well, this winter case, or cap, is to be set directly over the regular eight-frame Dovetailed hive, and is deep enough so that the edges can be pushed down into the sand or sawdust around the hive. We then virtually have a double-walled hive, with a dead-air space, so called. This air-space will be sufficient for moderate climates; but for colder regions, possibly even for the locality of the Home of the Honey-bees, we shall be obliged to use additional packing. To accomplish this, we make a cushion in the form of a ring, just large enough to put around the eight-frame Dovetailed hive, and another cushion on the cover. The case would be then just large enough to slip over the whole snugly, and crowd down into the sand or sawdust, as before mentioned. The expense of the case, when put on the market in lots of 100, would be about 35 cents each in the flat. As the chaff, or some absorbent, can be obtained cheaply in most localities, each bee-keeper can make for himself the cushions he would need. Now, please bear in mind that we have tested a similar arrangement only one season, and on a rather limited scale. While it was successful last winter, the weather was too warm to prove any thing. This will make the cheapest double-walled arrangement ever before offered in the market; and if successful, I do not see any reason why it should not supersede all other more expensive double-walled hives, because it can be so readily adapted to eight-frame hives already in use, that have no projecting porticoes.

You say, friend K., that even GLEANINGS will admit that a ten-frame hive is better for extracted honey. While we did so, the junior editor wishes to argue now for eight-frame hives exclusively, both for comb and for extracted honey. Perforated zinc, when placed over a brood-nest of eight frames, *promises* to work a revolution. Read what L. E. Mercer said on page 674, last issue, in regard to the proper size of a brood-nest in connection with perforated zinc. If we can force a queen to fill eight frames of brood below, by the use of the zinc, let us have the use of the upper story for extracting combs. Mr. Mercer says, and our own experience, and the experience as well of thousands of bee-keepers, goes to show that, as soon as the queen has filled seven or eight frames, she will, unless restrained, go above and lay. I believe that intelligent bee-keeping of the future, with eight frames, Langstroth size, will

rear all the bees that will be necessary for a good rousing colony, provided that those bees are reared *in time* for the honey harvest. This is a fruitful theme, and we trust that our subscribers will thoroughly discuss it. Let some of those California bee-kings—that is, those extensive extracted-honey men—give us some hints.

ERNEST.

In addition to what Ernest has said above, I wish to touch upon another point. I do not believe that any hive will ever become popular that is made with the intention of removing the packing or winter covering in summer time. After you have once protected a hive suitably for wintering, do not think of removing the protection in the summer time. The bother, complication, loose pieces, litter, etc., is too much, especially where hives are handled by the hundreds or thousands. Sooner or later, putting on packing will be neglected, and a great many times it will be off at the very time it is needed. Ernest's talk about 35 cts. reminds me somewhat of my visions of cheap things years ago. Make your protection in the shape of something good and substantial. Have it painted, and nice; and if you do this, it will come pretty near a chaff hive made a little smaller, with the view of having only 8 instead of 10 combs in the brood-nest. Many thanks, friend K., in regard to the "committee." Where so much is at stake, it needs a *committee* of the best bee-men the world affords. Where hives or fixtures are made by machinery, in carload lots, they ought to be made *right* if it is a possible thing to have them so.

AN ARTESIAN WELL IN SOUTH DAKOTA.

ARTESIAN WELLS IN GENERAL.

Our readers need hardly be told that every thing in the line of springs, underground water-courses, and especially artesian wells, have a special attraction for me. A few days ago, when one of our correspondents sent me a photograph containing the view above, I almost felt as if I *must* take a trip to Dakota to see it; and I would very freely give the amount of money needed if I could be spared at this time to see this wonder of nature.

Below is what our friend tells us about it:

I send you a photograph of one of our artesian, thinking you would like to see it; and if you would like, I will send you some of the specimens which it throws out. It will throw a 6-inch stream 24 ft. in the air, and a 4-inch 71 ft. The 4 is the one they use for fire. It will throw a 4-inch stream 100 feet without spraying.

J. W. CHAPIN.

Winfred, Lake Co., S. Dak., Sept. 1.

In addition to the above, we find printed on the back of the photograph the following:

Depth of well, 725 feet; diameter of bore, 6 inches; conservative estimate of pressure, 175 to 200 lbs. per square inch, and discharging every minute over 4000

gallons of water. It is conceded to be the artesian wonder of the world.

By looking closely you will see a pool of water that has collected round about the well. Judging from the buildings, we suppose the smaller jet was screwed on when the picture was taken. By all means, friend C., send us some of those specimens. We have a curiosity to know what is down in the ground where these subterranean waters come from. Four thousand gallons of water would be a hundred barrels of about the size of an oil-barrel, every minute. Just think of it! This water, if all utilized, should irrigate almost a whole county. Friend C., will you



WOONSOCKET'S FAMOUS ARTESIAN WELL.

please tell us how deep they had to drill for it? and have there not been other wells drilled in that vicinity, to see if the same subterranean supply may not be touched from other localities? Is it really the largest artesian well in the world? Perhaps the readers of GLEANINGS can kindly enlighten us. One reason why I ask is because such wells are really of more value than gold-mines, providing the flow is permanent, and I believe it usually is. You see, I have a little one of my own. It runs only 59 barrels a day, and it won't carry the water over 18 inches high; but still I feel very happy over it for all that. It is away down in the creek bottom, where it is difficult to utilize it; but if the water would rise only three feet instead of half that much, I could send a part of it up to the factory by a hydraulic ram. The springs scattered all over our land should be utilized. Spring water is too valuable to be allowed to go to waste.

SOME EXTRACTS FROM FOWLER & WELLS' WATER-CURE MANUAL.

THE GREAT "SECRET," OR "DISCOVERY," COPYRIGHTED IN 1847, AND PRINTED IN 1850.

I wish all readers of *GLEANINGS* and the *Microcosm* would put your articles on the subject, and this reply of Dr. Hall's side by side, and then decide which shows the spirit of an honest, Christian gentleman.

My sympathies are with you, because I believe the principle on which you acted in this matter is right, and that your motive was purely unselfish; so I take great pleasure in sending you some extracts copied verbatim from an old *water-cure manual*. The book referred to is "*The Water-cure Manual*," by Joel Shew, M. D., copyrighted in 1847, printed by *Fowler & Wells* in 1850. Speaking of these injections Dr. Shew writes:

"They may be repeated again and again, in as great quantity as is desired. . . . A good mode, too, is to take a small injection, a tumblersful, more or less, that is retained permanently, without a movement before morning. This is very soothing to the nervous system; aids in securing sound sleep, and, by its absorption in the coats of the bowels, dilutes acrid matters therein, tonifying and strengthening likewise those parts, and aiding materially in bringing about natural movements."

After naming various diseases for which this remedy is invaluable, he says:

"This statement will cause sneering, I know; but it is no fancy sketch. The thorough washing out, so to say, of the lower bowels, by which the peristaltic, or downward, action of the whole alimentary canal, is promoted, and by the absorption or transudation of water its contents are moistened and diluted, and the whole of the abdominal circulation completely suffused by that blandest and most soothing of all fluids, pure water. Whoever understands well the sympathies and tendencies of these parts of the human system will at once perceive the truth of what I affirm."

Let me add: Whoever reads this can at once perceive the truth of what you affirm: viz., that Dr. Hall has simply revised one of the old methods of water cure, and has no business to call it a "secret" or "discovery," or to sell it as such.

E. J. BAIRD.

Island, Pa., Sept. 11.

Many thanks, my good friend B. Since you mention it, I remember now that water cure was one of my hobbies when I was only eleven years old. Soon after, I bought the book you mention, of Fowler & Wells; and when I first saw Dr. Hall's discovery there was something strangely familiar to me about it; but as it was toward forty years ago, it is not much wonder that I had forgotten where I obtained my information. When about ten years of age I was a very weak, puny, feeble child; and a traveling lecturer on phrenology and water cure gave me my first ideas, and started me in daily bathing. I distinctly remember this: That in two or three months I astonished the whole family by taking a pail of water from outdoors, breaking the ice, then washing all over in the ice water, without feeling any more unpleasant than you do, my friends, when you wash your face in ice-cold water. After my bath, the new doctor prescribed walking a mile before breakfast. Luckily we had a cow pasture just half a mile

away, and that fixed it just right. I was appointed to fill the post of driving the cow home before breakfast. I hardly need tell you that, under the influence of the daily baths and morning walk, I soon developed a degree of health and vigor that I had never known before in my life. I think I read the book through several times; but, of course, I did not pay very much attention then to the matter of water cure by injections.

MAMMOTH PEAVINE CLOVER.

ALL OTHER SOURCES OF NECTAR PRACTICALLY A FAILURE DURING THE PAST SEASON.

The honey harvest is over. My crop is gathered and marketed. I have sold my comb honey at 16 cts. and my extracted at 13. Nearly all my comb honey, 2000 lbs., was obtained from my Bronson apiary, numbering 60 colonies. That apiary is located where the bees have access to probably between 300 and 400 acres of mammoth clover, and the honey was nearly all obtained from that source. Every year furnishes me with additional proof that the mammoth, or peavine clover, is the best honey-plant we have on the Western Reserve. My home apiary, which is located about 5 miles north of my Bronson apiary, did not average 5 lbs. to the colony—only $\frac{1}{2}$ as much as the Bronson apiary.

I wish to call your attention to an invention of my friend H. R. Boardman, which I think is of more value to the bee-keeper than any other invention pertaining to our business which I have seen or heard of in a long time; and that is, a solar wax-extractor. I purchased one of him about six weeks ago, and it does the work perfectly for which it was intended. The wax is extracted from old combs readily, and without any waste whatever, with less trouble than it would be possible to extract it any other way.

BOARDMAN'S SOLAR WAX-EXTRACTOR, AND ITS EFFICIENCY.

I think any man who has 50 lbs. of wax to extract, a year, would save the price of the extractor in two or three years by using one. I think you will do the bee-keepers of this country a great favor if you will get of friend Boardman a complete description of his extractor, and publish it in *GLEANINGS*. I don't know whether he intended to have his invention patented or not, but I think not.

My whole crop of honey, both comb and extracted, will amount to over 4000 lbs.—not a very heavy crop, but pretty fair for this year. If I had not sold, I could now sell my comb honey at 18 cts.

S. F. NEWMAN.

Norwalk, O., Sept. 19, 1890.

Friend N., you have given us just the kind of report in regard to the peavine clover we have wanted. Now, then, it is pretty certain that bee-keeping can be made to pay wherever this clover can be introduced by the hundred acres; and that is the way to raise any honey-plant so as to make it really practicable. Another thing, the quality of the honey will be equal to any in the world. All that is necessary is to introduce it and furnish a sufficient inducement to the farmers round about you to grow it largely. Terry's teachings will probably dovetail in, to the mutual advantage of both the bee-keeper and farmer; and, to sum it up, we may say clover is the rock-bottom of success, whether

you wish to raise honey, potatoes, or strawberries. I am really glad to have you give friend Boardman such a recommendation. Now, friend B., tell us all about this wonderful invention, and whether you have them to sell, and at what price. It can not be that they cost very much, if it will pay a man to have one who produces only 50 lbs. of wax a year.

ERNEST'S NOTES OF TRAVEL AMONG THE BEE-KEEPERS OF YORK STATE.

AT JULIUS HOFFMAN'S; THE HOFFMAN FRAME, ETC.

After bidding good-by to our friends the Van Deusens, we started on our journey again, Mr. Elwood driving, and I hanging on to the bicycle at the back of the seat. Whenever we struck a rut or hole in the road, it gave my arm a good jerk. It may have seemed somewhat of an anomaly to passers-by for a bicycle rider and his wheel both to be carried in a wagon. It was not because the wheel would not carry me, nor because the country was hilly and rough, but that we might have an opportunity of visiting together as before mentioned. I am afraid if it had been possible to carry my friend Elwood on the rear of my vehicle, folks along the road would have stared even more than they did, for our Starkville friend weighs more than 200 pounds.

As we went over the roads, I noticed in this hilly country that the effort of late years had been to *avoid* hills rather than to go straight over them. Although somewhat paradoxical, many times, the longest way to a point among these hills is the shortest. The early settlers formerly made their roads go in a bee-line over the hills, or very nearly so. The result was, there were some terrible climbs for poor horses. But later generations discovered that they could make better time by going further and around the hills.

As Mr. Elwood was to take a somewhat different route than the one he had before taken, he had to make inquiries along the way. The point we wanted to reach was the home of Julius Hoffman, two or three miles out of Canajoharie. We noticed on this journey what I had before, and have subsequently observed, that residents along the roadway very often have very crude ideas as to distances. For instance, we would inquire of some old rustic how far it was to the next town. The reply would be (we'll say), "Five miles." After having traveled half an hour, on the right road, perhaps our next informant would say that it was six miles. It was perfectly evident that one or both (probably the first) must have been wrong.

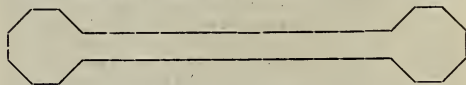
After driving along in this sort of way we finally came to within a respectable distance of Canajoharie, which used to be the old home of the *Bee-keepers' Exchange*, a monthly bee-journal edited and published by J. H. Nellis, later by Houk & Peet. It was discontinued in 1883. If I remember correctly, Mr. Nellis is still located in Canajoharie, though not now a bee-keeper. If we had had a little more time I should have liked very much to call on him and exchange greetings, in view of his past services as a bee-keeper and a bee-keeping editor. I have a kindly sympathy for all this latter class of people, especially as we know somewhat of the trials of publishing a bee-journal.

We did not go to Canajoharie direct, but made a short cut directly to Mr. Hoffman's home. Mr. H. formerly lived at Fort Plain; but lately he has been located as above. On

arriving at the place we found a very pretty residence, and a general appearance of thrift. Not knowing exactly the date when I should be at Mr. Hoffman's, and not having written him, I was a little uncertain whether I should be able to find that gentleman at home; but fortunately we found him there. He is not as old a man as I expected to see. We found him to be an intelligent and progressive bee-keeper, an energetic representative of his "fatherland," Germany. After dinner we went out into the home yard. I told Mr. Hoffman that I was anxious to see him handle those frames.

THE HOFFMAN FRAME.

He handles his frames—the Hoffman, before described in these columns—with rapidity and ease. While he did not remove and replace them any more rapidly than Mr. Elwood did his closed ends, I am sure he manipulated them in less time than most of us would the hanging frame. In former years he tried the hanging frames thoroughly; but as he could not handle them rapidly enough, and they were never ready for moving, he adopted the Berlepsch top-bar, something after this pattern, and subsequently,



if I remember, widened the end-bars near the top, making what is generally known through this section of the country as the Hoffman frame. Here was a bee-keeper who had 500 or 600 colonies, and I think he uses only one assistant, and him only part of the time. He attributes the reason why he can run so many colonies in several different out-apiaries, practically alone, to the fact of his using fixed distances. He would open up a hive, unloose the follower, and then he would pick up five or six frames at a time, put them down by the side of the hive, and perhaps the next frame we picked up would have the queen. Then when he got ready to close the hive he would pick up all the frames that were leaning against the hive, and insert them back in their places simultaneously. With his two thumbs on the outside top-bar he would crowd all the rest of the frames together.

One of the reasons why Mr. Elwood and Mr. Hoffman, and all the rest who use fixed frames, economize in time over those who use hanging frames, is in the final spacing. It is true, both use a knife or a screwdriver to start the frames; but I noticed that Mr. Doolittle with his hanging frames also uses one; in fact, so do all who use hanging frames on wood rabbets. As to the propolis sticking the closed ends together, so as to make the manipulation difficult, that is more in theory than in practice. Like Mr. Elwood, Mr. Hoffman could get his colonies ready to move on short notice. He had an ingenious wire-cloth button, so arranged that, by turning it, it closed the entrance with wire cloth, and, in less time than it takes to tell it, he could fix up any of his colonies ready to move to an out-apiary.

Mr. Hoffman runs for extracted honey only; and as he has produced tons of that article, I took occasion to ask him about extractors. He had been using a Stanley automatic reversing machine. While not altogether pleased with it, he thought there were a number of good features about it. He prefers something of his own design. This, if my memory serves me rightly, is a four-frame non-reversing extractor. I think he has used a Novice machine, but considered its capacity too small for his work.

After we had looked around awhile through the honey-house and the apiary we went into the house. Mr. Hoffman is an intel-

ligent, progressive German. It was very evident that he is well versed in all German bee-literature. He spoke of Berlepsch and one or two others who advocated 1¾-inch spacing. As he could not then refer to the authority at the time of my visit, at my request he prepared the article that appeared on page 673 of our previous issue. As usual, I explained that my time was limited and we should have to be moving. After hitching up we bade our friend good-by and started on the road again.

SHARON SPRINGS.

The next point we reached was quite a celebrated pleasure-resort, as above. Many were there, both for pleasure and for health. I do not know that I should object very much to spending a few days here myself. Our time was rather limited; and after driving hurriedly about, Mr. Elwood stopped in the rear of a large hotel, and asked if I should like to step around in front of the structure. I did so, and, presto! one of the most magnificent views of the Mohawk Valley was spread out before me. Miles and miles of territory were to be seen off in the distance. Gently curving this way and that was the Mohawk River. On the right and left, as far as the eye could reach, were those beautiful hills. Distance lends enchantment to hills to a bicyclist. I wish I had the language to express the emotions that came to me then. I am not at all poetic; but our stenographer comes to my aid by quoting the words of the old song:

Sweet is the vale where the Mohawk gently glides
On its clear winding way to the sea.

I am very sorry indeed that I could not have uttered that on the spot; but, as Mark Twain says, we do our thinking after we get home. After feasting my eyes, I went hurriedly back to where my friend was holding the horses. I suppose he thought I was in an "awful sweat" to get off on the wheel again; but the fact was, Mrs. Root was expecting me next day; and I knew that, if I did not arrive at Durham on the mountains, where she was visiting with friends, at just the appointed hour, she, like a good many other mortals of her kind, would worry. Much as Mr. Elwood had carted me about, he insisted on carrying me over the first big hill. As I came to bid him good-by, it was with some feeling of sorrow. Our Starkville friend is a man with whom I feel it an honor to be acquainted. He is not only an extensive bee-man, but he is progressive, and thoroughly alive to all that may benefit his brother-man, whether he be a bee-keeper or not. He is modest and somewhat reserved, and at first not very communicative, but has a loving heart when you come to know him. Before and after my very pleasant visit I found all along my journey that bee-keepers generally hold him in very high esteem, and I do not much wonder at it. It was not my pleasure to meet Capt. Hetherington, one of his most intimate friends; but I covet the pleasure of seeing him some time.

A FEW STRAY BITS.

Just at this point I recall that my mother and my better half remind me that I have made no mention so far of bee-keepers' wives. Just you wait, dear readers. There are so many things that I want to say that it is hard to crowd 'em all in at once.

Another thing that I am reminded of, is, that these stray rambling thoughts may subject the bee-friends whom I visited, to an unusual amount of correspondence. If I have not been explicit in details I would beg our subscribers to write to this office, rather than to the gentlemen I have mentioned. Most of them are ex-

tensive bee-keepers, and their time is quite fully occupied; and when we do get any correspondence at all from them, it ought to go, not to one individual, but to thousands of readers.

I am reminded, also, that from what I have said about this section of York State, a few perhaps prospective bee-keepers will consider the propriety of moving into these localities. Allow me to say that they are pretty well occupied by bees already; and if any one thinks seriously of locating among these hills, he will have to buy out some bee-keepers already in possession of the territory, if he wishes to be honorable about it. Elwood has 1300 colonies; Capt. Hetherington 3000, probably more; Mr. Tinnicli, Mr. Smith, and one or two others, have perhaps among them another thousand colonies. I noticed that these out-apiaries were just as thickly crowded in as they could be and not overlap each other's territory. While I am quite firmly convinced that this is one of the finest bee-countries in the world, I do not wish to have the friends who so kindly entertained me have some one else come in with more bees, and overstock the fields. Come to think of it, I am sure no one will; therefore, please excuse me.

These thoughts may seem a little out of place to interject right at this juncture; but if I do not give them here, I am afraid I shall forget to do so.

Well, here we are

ON THE BICYCLE AGAIN.

As we spent a little time in sight-seeing, it was about 5 o'clock when I left Mr. Elwood. I then had about twelve or fifteen miles to make. At nightfall I arrived at ——. I could have gone further to the next town; but as this section of the country was, of course, entirely new to me I did not particularly relish traveling among the hills, unaccompanied, unarmed, and alone. I realized that I had made somewhat faster time on the bicycle than we had when driving. As the place was small it was not difficult to find a hotel, which, having entered, I called for supper and lodging. My heart sank within me, for I saw that it was one of those places where a bar was evidently doing a thriving business. There were bottles and glasses; and while I did not feel at all inclined to patronize it, I felt very much disinclined to patronize the proprietor, even for such innocent things as supper and lodging. However, my bicycle was leaned against one side of the room; and after washing I partook of a hearty supper. On returning to the room again I discovered that a number had come in to see "that new arrival" and the wheel. They were mostly local sports, and men whom I judged patronized the bar. They were not altogether choice in their language, and the company was decidedly rough. I very much wished then that I had taken my chances of riding in the dark to the next stopping-place; but there was no help for it then. I would have gone to my room, but I did not exactly like to leave the bicycle to the tender mercies of those chaps. Ere long more came in, and then the drinking began. I fancied they eyed me rather suspiciously. Visions of robbery flitted past my eyes; and then I reflected how foolish I was. I carried but little ready cash, a small check, and a Waterbury watch. They wouldn't touch me, especially if I displayed the aforesaid timepiece. Before I retired, swearing, disputing, and drinking had been carried on to such an extent that I actually feared there would be a fight; in fact, it started, but the proprietor mollified the would-be fighters. I vowed then that I would never stop again in such a place, even if I had to travel all night, unaccompanied, unarmed, and alone, over an

unfamiliar and unknown road. At about ten o'clock the company dispersed, and I went to my room, somewhat disgusted and pained. I did not reprove the fellows for their bad language. Indeed, they were a class of toughs, I might say, whom I did not wish to argue with. It was my misfortune to stop at two or three such hotels; but only in the above case did I remain over night. It was very evident that the presence of liquors cursed the whole establishment. There was always a set of hard-looking customers—men whom I would hardly dare to trust out of my sight. On the whole, however, these wayside hotels were no worse than the average of those in Ohio, if I except the two or three I have mentioned.

Next morning I arose early, refreshed; and after an early breakfast I took a start on the bicycle, about seven o'clock, for Durham, on the Catskill Mountains. I had been informed that there were two or three quite prominent bee-keepers on the route. There were fifty miles ahead of me, over some hills quite as high as those I had gone over, besides the two or three bee-keepers whom I wished to visit. Should I be able to make it all in one day? We'll see. My first point was Cobleskill, a run of about fifteen miles, which I reached in about an hour and a half. It is a very pretty place through which passes a mountain railway, and here I had the pleasure of making the acquaintance of Mr. B. Van Wie. He keeps about 100 colonies. The bees had done nothing for him this season of any account, although they were, at the time of my visit, working pretty well on buckwheat, and he will probably get a pretty fair crop from that source. I was very much annoyed on my bicycle routes by poor and insufficient directions as to the best route to reach a given point. I told Mr. Van Wie that I should have to make my stop necessarily short, as I had a good many miles ahead of me, and wished to reach Durham that day. He very kindly gave me most complete directions. The result of it was, I was enabled to accomplish my journey of 45 miles easily in about six hours, and visited the before-mentioned bee-keepers that day, for which Mr. V. has my thanks. After eating two or three Red Astrakhan apples (oh how good they tasted after my bicycle ride!) and taking a refreshing drink, I took myself to the wheel again.

[To be continued.]

GETTING BEES OUT OF SECTIONS OR EXTRACTING-CASES.

BEK-ESCAPES A GREAT BOON TO THE BEE-KEEPER.

On page 555, Aug. 1, Mr. Doolittle writes about getting the bees out of the sections and the extracting supers, and asks for an escape that can be put on at night, and take the sections off in the morning. Perhaps to help him and others, a little experience of my own and of others that I know may help some. The main trouble with all escapes, so far as I know, is the lack of depth of the case to which the escape is attached; and, like some other things, accidental occurrences have given the clew. Without trying to take any laurels from any one, I will tell of the first escape that I ever saw, which was some years ago—I can not tell how many; but it was taken from the old-fashioned cottage fly-trap, and was made from two of the inside pieces. They are $5\frac{1}{2}$ inches wide by 6 long, bound all round with tin, and bent at right angles. They have eight holes, $\frac{3}{4}$ inch in diameter, made where the wire cloth is bent. Two of these were put into a box with sides and ends

about 3 inches deep, which brought the ridge of the wire cloth within about half an inch of the combs in the hive, so that, after a time, the bees would begin to work back into the boxes again. This fixture was used on the old No. 2 American hive, under the old style of King sections; but it worked well unless it was when the colony was very strong, and the last row of sections was to come off; then there was trouble about getting all the bees off from the combs, and many of them would be defaced. Then when Mr. Reese put out his escape, in 1887 (which, I believe, was the first time the subject came out in print), he advocated the double cone, which is a very necessary feature in the successful working of the escape. I knew of perhaps 100 of those escapes being made to be used in 1888, with a varying depth of case from 3 inches up to 8 inches, and with from 2 to 8 cones, with both single and double cones, and this is how they succeeded. In the shallow ones there was a half-inch board used for the base, or dividing board, with a $\frac{3}{4}$ space above, and the cones were about 2 inches deep, some single and some double, because some of the makers and users knew that one cone was just as good as two. Some of them, the cones were nailed on the under side of the board, and some were nailed on the upper side, and projected through a hole bored for them. Deeper ones were made in like manner, and usually were made from just such pieces of boards as were handy. I made 25 or more myself; and to try them I used various depths from three to six inches, but they mostly were of 4-inch depth. Those that were shallow did not empty the sections as quickly or as clean as the deep ones, and quite often the bees would learn the way up and down when they were left on for two or three days, and the swarm was very strong; but in a trial with three escapes 6 inches deep, and two that were 5 inches deep, that were left on the hive for over a week, not a bee was found in the sections after from two to five hours, which showed that depth gave success.

Now, the way that I found the depth being the clew, is this: I was telling a friend about them, early in 1888. He picked up a board 8 inches wide, and from a strip of wire cloth from seven to eight inches wide we made ten cones by cutting it square and putting five cones on each side of a half-inch board, with three-inch holes. This let the cones have a good half-inch space between, except at the outlet. I saw him again in July, and learned that he could clean a case of sections in half an hour, of every bee. He set the escape crosswise of a hive-body, raised the cover-board from the crate, gave the bees three or four blinding puffs of smoke, lifted the crate of sections from the hive to the escape, and then set both in place again on the hive; then gave a little more smoke, put on the cover-board, and left them. After looking at the other bees a few moments we went back to the escape, took the case of sections to the honey-house, and not 25 bees were to be found in the case. We then looked at the under side of the escape, and found it full of bees. These were jarred in front of the hive, and the cover-board put on the section case below. Besides this deep escape he had them three, four, five, and six inches deep, and with four, five, and six cones; and I learned that his results were like my own—that the cones should not come nearer to the bees in the hive or case below than one inch; that $\frac{3}{4}$ space above the board was just right; that six cones, bringing the corner ones three inches from the corners each way, and the other two in a row lengthwise, was the best; that not less than a two-inch hole should be used in the board, and a three-inch hole is better; that a double cone is necessary, because, if

a bee on the outside can lick from a bee on the inside, they will learn the way back and forth; that there must be ample room in the escape-case below the board for the bees from the sections to cluster, and oblige them to go down the sides of the case to the hive or sections below, if you want your sections to be freed of bees quickly.

I know, from what I used the escapes in 1888, '89, and '90, that I can have the sections freed of bees so I can handle them three times as fast as without the escape; but I don't want them less than $4\frac{1}{2}$ inches deep, and I like them from 5 to 6 inches deep better. I can handle more honey alone with the escapes, and easier, than I can with a helper without the escapes. Twenty-five escapes are as good as one man to handle 100 colonies of bees when taking off sections.

Milford, Ct., Aug. 14.

H. L. JEFFREY.

Many thanks, friend J., for your suggestions. It is only by repeated trials and experiments that we can tell just what bees will or will not do in matters of this kind. Now, inasmuch as you know just exactly what is needed in this matter, can you not make them and offer them for sale?

THE MOLE CRICKET.

ITS HABITS.

The insect forwarded by you from E. W. Hammond, Lima, O., is the mole cricket. As Mr. H. says, it is a curious insect, and it is not strange that he should wish its name, and habits. The technical name of this is *Gryllotalpa borealis*. The name *Gryllotalpa* really means cricket mole, which, if reversed, would be quite the truth. It is really a cricket, but is very molelike, as is at once apparent from its front legs. This insect is very common here; but as it rarely comes forth from the earth, it is not often seen. It inhabits low moist ground, and is not infrequently seen or found in cultivating or ditching in such places. All authors say, as did Harris, which the others copy, that it feeds on the roots of grass. In Northern Ohio and Michigan it has been known to eat into potatoes quite seriously, especially when planted on low ground. As the potato is only an enlarged root, it is not strange that these crickets, like the wire-worms, should desire to test their quality.



One year our students took several of these crickets from one of the rooms on the first floor of one of the college dormitories. They fly forth from the earth to mate, and I presume were attracted to this room by a female which had been brought in by the students. If these are plentiful enough to be troublesome, we must plant our potatoes on upland.

Agricultural College, Mich.

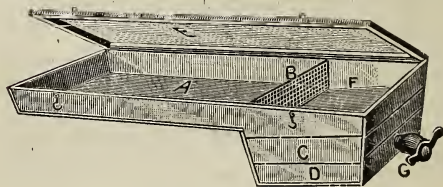
A. J. Cook.

SOLAR WAX-EXTRACTORS.

A DEVICE USED BY ONE OF CALIFORNIA'S PROMINENT BEE-KEEPERS.

Nearly every apiary in California has its "sun extractor," as they call them here, to melt up cappings and broken combs; and, so far as my observation goes, they are all built on the same plan and about the same size. It looks as though they were all made after the same pattern, without any thought of improvement. I believe they were originally made to extract combs full of honey before the honey-extractor came out; and, after the honey-extractor came, the same implement was used to melt the cappings. I think, however, that they can be greatly improved for melting cappings, and that is the object of this article. Perhaps you would like to know how the old original California sun extractor is built, so I will describe it first and then give what I think is an improvement.

The box is made of $\frac{3}{4}$ lumber, lined inside with tin, and is 58 inches long, 30 wide, 13 deep, outside measure. The glass cover is two ordinary window-sash 9x13 glass. A wooden frame inside, 5 inches below the glass, supports a sheet of perforated tin, the size of the inside of the box. The cappings are laid on this perforated tin, and, when they melt, the wax and honey run through into the chamber below, leaving what Californians call the "slungum" on the tin above. The wax hardens immediately into lumps of every shape when it gets below the tin, and is always melted over a fire and run into cakes before sending it to market. The honey is drawn off through a tube or molasses-gate in the lower end of the box, and is usually kept for feeding. Is it not a mistake, where the A B C book says the wax is ready for market? and also where it says, "A pipe may be connected with it to run the melted wax into the inside



MCINTYRE'S SOLAR WAX-EXTRACTOR.

of a building"? Taking the wax out of these extractors, and getting it ready for market, is an inconvenient and disagreeable job, because the lumps of wax are all smeared with honey. What we want is something that will separate the wax, honey, and slungum, and leave the wax in a nice solid cake ready for market. In order to do this the wax must not be allowed to fall in the shade of the perforated tin or zinc and cool off, but it should be kept in the sun until all is melted, when it will cool in one solid cake.

We have been experimenting a little along another line, and find that, if the cappings are laid on an inclined plane under glass, the honey and wax will run down and leave the slungum on the inclined plane. Now, all we have to do is to have a box at the bottom of the inclined plane, also under glass, to hold the wax and keep it melted until it has all run down, when it will harden in one solid cake. To make a long story short, here is a picture that will explain better than words.

A is the inclined plane, where the cappings are put. I would make it 2 feet wide, 4 feet long, 5 inches deep. B is a piece of wire cloth to prevent any slungum from running into the

honey and wax receptacle F, which is 2 feet square on top, tapering to 18 inches at the bottom, and 12 inches deep. The flaring sides will allow the cake of wax to be lifted out easily, and the honey is drawn off through the molasses-gate G. The space marked D will be filled with honey, and the space C with wax. E is the glass cover over all. It should be hinged on, and fit tight to prevent the escape of hot air.

Fillmore, Cal., Aug. 18. J. F. MCINTYRE.

Your ideas on the construction of the solar wax-extractor—that is, the principle of it—are correct. When I visited G. M. Doolittle I found he was using something on very much the same principle, only, if any thing, it was on a simpler plan. As I took a photograph of it at the time, I will, when an engraving is made, describe it. Yes, the wax should, as fast as melted, run down the inclined plane, and thence into a receptacle also exposed to the direct rays of the sun after thoroughly melting. We propose to modify our solar wax-extractor, so as to combine the features of the one illustrated above, and the one used by Doolittle. Both of you have made some very great improvements in the sun extractor, over the one we have been selling.—E. R.

EXPERIENCES OF THE PAST SEASON.

MRS. AXTELL GIVES US A GREAT NUMBER OF VALUABLE, PRACTICAL THOUGHTS.

Our bees thus far this season, have stored but little surplus. The winter being warm they consumed the most of their stores, and came out in the spring strong in numbers; consequently we had to feed largely. The first of May found them almost wholly dependent upon what was fed them. Then came three weeks of cool cloudy weather, and they flew but little; and as Mr. Axtell and I were both feeling so poorly just then we came near letting some colonies starve; and the consequence was, they dwindled instead of increased in numbers just before the honey harvest; but by building up the stronger with brood from the weaker colonies, we had the larger part of our colonies ready for the honey harvest in June. Such colonies gathered from 10 to 25 lbs. of surplus. Those that we left unaided gathered no surplus.

Some 30 colonies that brood was taken from to build up others, have had to be fed since about the first of July, and will still need more feeding.

The drouth has been so severe as to dry up all honey-bearing plants, or nearly so. About ten days ago we had a heavy rain, and two or three lighter ones since, that have wonderfully revived vegetation, causing the little heart's-ease there was to branch and blossom out, and bees are gathering a living now. We are hoping our bees will gather enough to winter upon.

THE DIBBERN BEE-ESCAPE.

When we take off our surplus honey, as usual, there are some bees we can not get out very readily. We generally set them in the honey-room on end around on the floor, and let the bees fly to the window, and then pile up afterward. Sometimes we pile them up one super cross-wise of the other, and another lengthwise, and so on; but this time we put a Dibbern bee-escape honey-board over a weak colony, and piled up supers six or eight high, and in a few days took them off, and found the bees all gone out, or nearly so, and the colonies nicely

strengthened up. Some other weak colonies we did not use bee-escapes upon, but partly covered the colonies, and left one good passageway at one side of each row of sections, and then piled the cases up as high as we could conveniently reach, and thought it was safe, and left them on several days. Those colonies got both bees and the unsealed honey. The bees mostly went out, but not so well as those with the escapes; but it helped the colonies, and did not injure any capped honey. Although it was done at the time of a honey-dearth, scarcely any bees were killed, and I think no queens were killed. I think the latter way of getting out the bees an excellent one, especially if one has weak colonies he desires to strengthen, especially if there are many bees left in the supers. Some colonies seem to cling to the supers more than others, and it takes a long time to get them all out.

BAIT COMBS.

Our bees this summer would have stored but little honey in sections if they had not had bait combs. Many colonies filled only such combs, and put the remainder of their honey into the brood-combs below. Wise little bees! they knew better than their owner what a long drouth was before them.

I certainly would never melt up clean combs in sections, or even bits of new comb that can be fitted into sections. I think there may be a difference in localities. Bees may more readily enter the supers than in other places. It retards swarming if they may be got to work briskly in the supers before they get the swarming fever.

ITALIANS AHEAD.

This spring I noticed that the hybrids entered the surplus cases much more readily than the pure colonies; but the pure ones that did work above, gathered much the most honey. In the body of the hive the pure colonies filled every cell possible—chucked it full—while a few black hybrid colonies were very light in stores. For that one reason alone it pays to keep only pure Italians as far as possible. I am afraid I should feel like giving up bee-keeping if we could get no better bee than the blacks for these poor seasons. Good years it doesn't seem to make so much difference, except in handling. They run provokingly just where one does not want them, while the pure ones stick to the combs quietly; but the blacks must be equally hardy a race of bees as the Italians, or it would not be so difficult to keep them pure.

ARE THERE TWO KINDS OF COMMON BEES?

It does seem to me there is a difference between the black and the brown bee. While at the Aurora Cancer Hospital this spring to have a small cancer taken out my left cheek, the doctor brought home a small colony of large brown bees. The bees certainly did not look so black and shiny as the blacks of our neighbors at home. The colony was so small that I feared he would get no surplus from it this summer, and I never handled a colony of Italians that was more gentle. When working them, through transferring some of the combs and strengthening others, I threw off my veil and worked with both face and hands bare, and got no vicious sting. Only one stung me, and that I mashed. I suppose one reason they were so gentle is, I had good heavy smoke. I told the doctor I wanted some smoke to subdue them with, and he went and got a large stove-kettle and filled it half or two-thirds full of coals and chips, and set it on the side of the hive where the wind would carry the smoke over the bees. He had the colony set on the top of an eastern veranda, close up to a window

where he could watch the bees from a bedroom window, and step out of the window and care for them.

A few days ago I had to return to the hospital, as the cancer did not seem to be wholly eradicated; but I hope it is entirely destroyed now. I found the colony of bees built up into a strong fine colony, and had given something like 20 lbs. of surplus honey, but had not swarmed. It had plenty of brood and honey below in the brood-nest. I think there are not many bees kept in the vicinity where he lives, and I could not find that there was any large bee-keeper in Aurora. As there is a small stream running through the town, there is waste land covered with wild flowers, and it seemed to be a good locality for bees.

THE ADVANTAGES OF ONLY A FEW COLONIES IN A LOCALITY THAT IS NOT FIRST CLASS.

Many poor years that bees do not pay if run for honey as worked by the average bee-keeper, would yield returns, if a person kept only a few colonies and had them all boiling over with bees at the beginning of the first honey-flow. We seldom have a year but that the bees would pay their way, with a small income to their owner, above the cost of keeping, if worked on the above rule; and when a good year came they would pay largely.

VICIOUS HYBRIDS AND YOUNG CHICKENS.

Little black chickens, while very young and downy, ought not to be allowed in an apiary, especially if left to run with the hen, or confined in a coop near a vicious hybrid colony at times of the year when much work is done; but when they get older and feathered out they are very useful to gather up the roaches and moths, as the bees do not seem to sting them so badly as when young and downy. We have never had them bother white chickens, even while very young. We have two young Plymouth Rock cockerels about half grown. When I start down into the apiary they will follow me around from hive to hive picking up roaches, as there are a good many in our apiary this year. They will pick a roach out of a lot of bees that are shaken off upon the ground, so quickly that I don't think they get stung at all, and seem to enjoy the fun.

Comb honey is almost a staple article in our little town, while twenty years ago one had to work hard to sell it all. Now the principal groceries and stores all keep it the year round, if they can get it.

Cut-out honey looks very nice if cut out in square chunks and set up on edge in a circle around the outside of a new tin pan, and then the center filled in; and quite a quantity may be laid on top, and all covered over with a glass cover, such as are used at restaurants and lunch-rooms to cover cakes and pies with. One groceryman sold more for us of extracted than three other stores in sections last winter; but it was the *man* that sold the honey, rather than the shape it was in. In winter, cut-out honey will sell readily without a cover. As soon as it gets to looking mussy, and the unsealed and liquid honey candies, we take in a fresh panful, and buy back all that was left in the pan.

In leaving honey in stores, especially in the warm weather, the cover should fit so closely that dust and flies can not get in, else it becomes unsalable in a short time, and grocery-men get disgusted with it, and do not care to handle it. Sometimes bees, also, find it if not tightly covered, and soon fill the grocery so that people are afraid to enter, and so the groceryman loses trade for an hour or two, and concludes that handling honey won't pay. When bees get to entering a grocery they hang around the door. Such was the case some years ago in

one of our grocery stores in Roseville, where we had our honey.

CHICKENS OR BEES, WHICH?

In looking over a back number of GLEANINGS the question is asked, "Which pay best?" We should say, "Bees, in the long run, counting several years together." Poultry is usually a source of profit every year; and every month in the year, with careful handling, it might be made to be profitable; but when we do get a good year for bees they are very profitable, and bring in a large income—so much so we see many people attracted to the pursuit only to give it up, perhaps the next year, in disgust. So it is those who have perseverance that make bee-keeping pay best; and then I think we get too many bees in a neighborhood, especially where all waste lands are tile-drained, as is the case here.

A SWARM OF DRONES.

Last summer, between four and five o'clock, while I was still out in the apiary watching for swarms, I heard a loud humming of bees just above my head. I looked above me, and all about me was a swarm of drones. Scarcely any workers could be seen among them. They flew round and round in a circle some ten minutes or so, and then all at once seemed to scatter, not settling like a swarm.

IS EXTRACTED HONEY INJURED BY BEING STORED IN OLD BLACK COMBS?

Why would it not be a good plan, when desiring to use old combs for extracted honey, to bleach them somewhat by filling them with water and letting them stand a few hours, and throw out the water by extracting them. I did so at one time with a few combs, and the water thrown out was nearly as dark colored as coffee. If the water would be colored by dark comb, I should think honey also would be.

WINDBREAKS FOR BEES.

I don't think we sufficiently value windbreaks for bees. If wintered out of doors they are invaluable. We could see a great difference in the loss of bees in wintering just as soon as we had erected a high board fence, $7\frac{1}{2}$ feet high on the east, west, and north side. It does not make the apiary much warmer in the summer, as we feared it would, because, in hot weather, the wind nearly always blows from the south or southwest or southeast, and then it blows into the apiary. If it blows from the north or northwest or northeast, generally the weather is cool, and it makes no difference if it does not blow into the apiary. If the bees are wintered in the cellar, and are set out upon their summer stands with a windbreak, even if packed with chaff the wind pierces the cracks in the hives, and chills brood in small colonies, while the bright sunshine at the entrance invites the bees to fly, and the cold wind so chills them that they never return.

Ernest mentioned, last winter, that he had no trouble in keeping his 40 colonies of bees cool enough in his cellar; but if he had added 40 colonies more, he would have seen a great difference in temperature; and if he had made it 150, even if the cellar were as large again, he would have seen it almost impossible to keep them quiet such a winter as the last.

With proper windbreaks, bees may be taken from the cellar very early in the spring, and set on summer stands, and do even better than left in late, especially where there are many bees left in the cellar. The remaining ones will do better also. We choose that part of the apiary where the winds are broken off by buildings, to set out our first colonies, and lay on top of the hives an extra quilt, and lean up against the front of the hive a board on cool days.

Colonies taken out the first of March will need from 5 to 10 lbs. of honey per colony to spring them, more than colonies left in the cellar until the middle of April; but they will be stronger colonies the first of June if they are provided with that much more honey, and properly protected from high winds; and being stronger colonies they will gather more than the 5 or 10 lbs. of honey per colony, more than the ones set out later.

It seems to me it might be easily tested whether colonies of bees gather more honey or less, by having their queen taken from them or caged during the honey harvest or swarming time, by placing several colonies upon separate scales, one half by having the queen removed or caged, and the other half retaining their queen.

BEEES DYING IN JUNE.

Just after the first few days of honey-gathering from white clover, the first of June we had three days of high winds. On the third day, and for several days thereafter, our bee-yards were literally strewn with dying bees. A few fair colonies were reduced to one or two combs of bees. Two small colonies lost all but the queen and a few young bees—not enough to cover a comb. Strong colonies did not seem to be affected in the least. We could not think what could have caused it. If it had been the wind alone, all would have been alike affected. We concluded it was the large honey-flow. The few old bees in the hive, finding they had a great amount of brood and young bees to labor for, actually worked themselves to death, and could not withstand the high winds.

Roseville, Ill., Aug. 23. MRS. L. C. AXTELL.

Why, my good friend, you have given us a wonderful array of practical thoughts and suggestions; but it throws a shade of sorrow over it all when we learn that you are afflicted with cancer. May God grant that the hospital you mention may have skill and wisdom to fight successfully against the dread disease.

You say the colonies from which you took brood had to be fed about the first of July. Now, are you sure that those which *received* the brood were benefited enough more to pay?

We have practiced the very plan you mention in regard to getting bees out of the supers, by setting them over a weak colony; but we never noticed that they could be made to take out the unsealed honey. I think that, perhaps, unless the honey were removed at just the right time, they would be quite apt to take some of the *sealed* honey also.

The testimony in favor of bait combs seems to be pretty conclusive; but is it not true that some sections that have perhaps been tried one or two seasons became obnoxious to the bees? I know that we had some that we put on year after year in time to get them full. The bees would fill new ones containing foundation; but these old ones were finally thrown away. They were of different pattern, so we recognized them at sight.

Are you not a little severe on the hybrids because they do not keep enough honey in the brood-nest for wintering, as the Italians do? Many of our large honey-producers would be glad to have every drop of clover honey put in

the sections. Of course, they would have to keep watch of colonies that do this, to prevent them from starving; but I think it would pay well for the time required.

Although you do not say so, I presume the brown bees mentioned are found somewhere in your State of Illinois. Now, if there is really a difference, why were they not crossed and re-crossed years ago? I can hardly think it is any thing more than accidental. I have seen some colonies of blacks that were very gentle; and I have seen them, too, that were brownish colored instead of black. Where great numbers of young bees hatch out at once, when they become of the right age they have a much brighter look than older bees.

We have never known bees to sting chickens, but it has been reported once or twice.

Your remarks about looking after the honey at the groceries are excellent. In no other way can a honey-trade be built up.

Your suggestion, that *tile draining* is bad for *bee-keepers*, is a big point in favor of good farming, even if it is bad for the honey-crop. Our farmers who raise weeds will take the hint.

Your suggestion, that old combs *may* color the honey, is a good one.

We agree with you in regard to windbreaks.

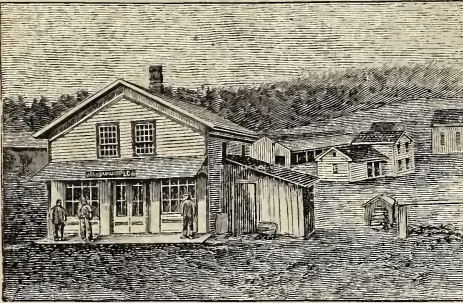
In regard to bees dying in June, so many such reports have been received we think there must be something in it besides a lack of stores. I have sometimes thought, as you state it, that the labor demanded by the growing brood is so great as to wear out or kill the nurse-bees by overwork. Is it not strange that bees, with their wonderful instincts, should so many times behave themselves much as human beings do?

RAMBLE NO. 29.

STEUBEN CO.

Haskinville is a town in Steuben County, noted for its wooded hills and fossil rocks. One is more impressed with the grandeur of the scenery as we enter the county than we are after we get in. The borders are cut up with deep winding ravines and picturesque glens—just the county for camps of brigands. But our traveling companion was a very honest-looking young man, and we trusted to his guidance. Our team waded patiently through the mud, and at last reached the enterprising village of Haskinville. The enterprise all seemed to be centered in one store conducted by George and Ziba Silsby, and a little Wesleyan church, conducted by Rev. Mr. Clow. We found the Silsby Bros. working heart and hand with the minister, and evidently having a good influence in the community. They seemed to be very conscientious in their dealings, and kept nothing that savored of alcohol, and had even stopped the tap at the little hotel near by. After considering the influence that tobacco has upon the cleanliness and morals of people, they had also thrown up a good trade in the weed, and seemed to be making a good living without its revenue. It was no little wonder to us to find them holding the postoffice, and dispensing the mail under a Republican adminis-

tration, when they are both ardent Prohibitionists; but we believe these young men will not lower the standard of principle, even if they do get turned from office.



SILSBY BROTHERS' STORE.

We saw here for the first time in many weeks the familiar face of GLEANINGS at the residence of Henry Sprague, who is a veteran in the bee-business, having now about sixty colonies. Mr. S. uses a side-storing hive, but was not satisfied with it, and was studying the Dovetailed hive and a non-brace-comb wide thick top-bar, with a view of adopting them. His experience with very narrow top-bars had given him much trouble by bees filling up between with not only brace-combs but with great daubs of comb and honey. Sixty colonies was the limit of his field. Extracted honey was raised to some extent, and thrown out with an old-style Gray & Winder machine. His Bingham smoker was an ancient one, twelve years old, and good for a few more puffs. Cellar wintering is practiced; and while most bee-keepers put clean sawdust upon the cellar-bottom, Mr. S. had a good depth of straw. We concluded, all to ourself, that he had an excellent material for mice-nests, and we kicked around rather unnecessarily to wake 'em up, when, "dunder and blixen!" how we did commence to sneeze!

The grip was the main occupation of people generally just then. We had heard of some very sudden attacks, but had thus far escaped; but we thought we had it sure this time. We had relied upon a large chunk of camphor as a sure preventive, and got it to our sneezing-apparatus as soon as possible. This prevented further external explosions; and while we were allowing the internal feelings to subside, Mr. S., who had followed our sudden exit from the cellar, said I was afflicted with cayenne pepper instead of the grip.

"Cayenne pepper!"

"Yes. That straw you kicked around so is sprinkled full of cayenne pepper. I put in straw

and pepper every fall to keep the mice out. If they get into that straw they sneeze just as you did—ha! ha!—and get out about as fast as you did."

We found Mr. S. and family also earnest workers in the aforesaid Wesleyan church, and a family of influence for good in the community.

Willard Collins is another young bee-keeper in this town, and it was in the large forest near his father's residence we photoed the bee-hunters' camp. Will, with the ax, has his eye on a bee-tree, and the other fellows are ready for a slice of bread and honey. These forests are filled with just such trees as bees delight to live in.

Ira Bowen, of the town of Fremont, the honest-looking young man who conducted the Rambler safely into this region, is also a bee-keeper, and a keeper of a maple-sugar bush. The family is sweetened at both ends of the season, and, of course, they are sweet the year round. The Rambler was fed on maple in all shapes, and believes that Stenben County can produce a product equal to or even superior to all others. Ira uses the L. hive and packs with straw outdoors; and, though having a small apiary, he has been successful with it. His sister Alice helps to a certain extent, but it is mostly advice, for her first experience and attempt at hiving bees gave her a severe lesson as to the deceitfulness of the busy bee. Ira and the boys were busy on a remote part of the farm, when a swarm of bees came out. "Now," says Alice to her mother, "is my opportunity. This is the chance of my lifetime to show what women can do with bees; The Chautauquan says that bees will alight every time on an elevated mullein-stalk."

Obtaining one she held it aloft among the bees, but they gradually drifted around the corner of the house, out of sight. She held on to the mullein, however, for half an hour, more or less, thinking they would come back in good Chautauquan order. Of course, her arm pained her not a little; and, being an experienced schoolteacher, her heart went out in sympathy to those refractory urchins she had punished by making them hold up a stick of wood. Her reverie was, however, broken by her mother calling from the window, "Why, Alice, what are you holding that mullein-stalk up there for? The swarm has gone back into the hive long ago." That mullein-stalk was dropped like a hot potato, and Alice now believes there is nothing but deceitfulness in the busy bee, which opinion is shared in, more or less, by the RAMBLER.

DID THE BEES STEAL THE EGG?

TWO OLD QUEENS IN THE SAME HIVE. AND LAYING PEACEABLY.

In GLEANINGS for Aug. 1, page 568, you say you think it doubtful whether bees will steal eggs from another hive. Let me give my experience. I had a colony of blacks which I wanted to change to Italians. After killing the old queen I waited one week, then took out all frames and gave them frames with foundation, with the exception of one frame that had some comb which I had fixed up according to Alley's plan, with 10 or 12 eggs in it. The bees built out two very nice queen-cells; and a couple of days before they hatched I looked them over, and just alongside of one of the capped queen-cells was another queen-cell just started, with an egg in it. Now, where did that egg come from? I am positive there was no queen in the hive nor any fertile worker, as the



WILLARD COLLINS' BEE-HUNTERS' CAMP.

cells hatched, and in due time the young queen was laying. One egg was all I could find.

Another thing I should like some information on: This summer I have been requeening all colonies which had old queens. One day, after catching three or four old queens, out of curiosity I dropped one at the entrance of a strong colony which I knew had a laying queen. She walked right in, apparently undisturbed. Ten days later I examined this hive and found two old queens laying for all they were worth.

I am positive both were old queens, as both were clipped (I keep all my queens clipped). I do not think they had tried to supersede the old queen, as there was no sign of it, and she was laying well. Is not that somewhat out of the usual order of things? FRANK W. LIGHTON.

Williamsport, Pa., Aug. 12, 1890.

Friend L., I am not quite satisfied that the bees stole that egg. You do not make it quite clear, however. Did a good young queen hatch out from that egg that came into the hive so mysteriously?—Letting a queen loose at the entrance of the hive where they have a laying queen, without her being harmed, is nothing very strange, after all. If you have a dozen queens you don't care any thing about, and you put them at the entrance of other hives during the honey season, I think you will find a half or more of them will be received and go to laying, and you will find the two queens in a hive, probably, until the honey-flow ceases.

INTRODUCING.

DR. MILLER'S METHOD WHEREBY IT CAN BE ACCOMPLISHED WITHOUT EVEN OPENING THE HIVE.

The plan of introducing queens by means of the Peet cage, letting the bees eat through the candy, thus liberating the queen, presents some advantages over any other method I have tried. It is especially advantageous in an out-apiary. Kill your old queen, put the new one caged in the hive, and if you don't look at her again for a week it doesn't matter. But the Peet cage doesn't work equally well in all hives, for the simple reason that there is not room for it. My hives have flat board covers, so there is not room between the top-bars and cover, and the only way to do is to put the cage between the combs, which spaces them so far apart as to make trouble.



MILLER'S INTRODUCING-CAGE.

I send you herewith a simple introducing-cage that I have been using this season with a great deal of satisfaction. It is not a shipping-cage, of use only for introducing, but it takes up so little room that, if left between the top-bars or combs for a year, no great harm would be done. Generally, however, I push it into the entrance of the hive, under the bottom-bars, and prefer this unless it is so cold that there is danger of chilling the queen. It is so simple that any one can make it.

Take a block 3 inches long, $1\frac{1}{4}$ wide, and $\frac{3}{8}$ thick; two blocks 1 inch by $\frac{1}{16}$ x $\frac{3}{8}$; two pieces of tin about an inch square; a piece of wire

cloth $4\frac{1}{2}$ x $3\frac{1}{2}$; two pieces of fine wire about 9 inches long, and four small wire nails $\frac{1}{2}$ or $\frac{5}{8}$ long. That's the bill of material. Lay down the two small blocks parallel, $\frac{3}{8}$ of an inch apart, one piece of tin under, and one over them. Nail together and clinch. These two blocks, being $\frac{3}{8}$ inch apart, make the hole to fill with Good candy, through which the queen is liberated. A good way to make sure of having this hole all right is to lay between the two blocks, when nailing, a third block $\frac{3}{8}$ square. Put this nailed piece at the end of the large block, and wrap the wire cloth around it, letting it come flush with the end of the small piece, and it will come within about half an inch of the end of the large piece. Wind one piece of wire within about a quarter of an inch of one end of the wire cloth, and fasten by twisting, and wind the other wire at the other end. Play the large block back and forth a few times, so it will work easily in the wire cloth, and trim off the least bit of the corners at the end of the block so it will enter easily. To provision it, let the large block be pushed clear in; fill the hole with candy, and tamp it down. When to be used, after putting in the queen, push the block in far enough to allow the queen a room about $1\frac{1}{2}$ inches long. After the bees have had it for some time it will be so glued that the plug must be scraped off before using again. There is nothing brilliant about this cage, and nothing really original, but it has the merit of such Simplicity as to be easily made by any one, and of being of such size and shape as to be used where others can not well be used.

BAIT SECTIONS FINISHED FIRST.

This year I had some 250 of last year's unfinished sections used as bait, one in a super; and after the general report that such sections were filled first and finished last, I was quite interested to notice how mine would come out. Invariably these bait sections were commenced first, just as reported. And almost as invariably these sections were the first ones in the supers to be finished. I think there were two or three of the 250 that were not first completed. Moreover, they are nice sections, but not quite so nice as the others. Now, why is it that the general agreement has been that such sections were last in being finished, and would better be thrown away? The only reason I can guess at is, that some honey, if only a little that was granulated and dried, was left in the sections. When I first used bait sections I thought there must be some honey left in them, and such sections, when finished, had a watery appearance, especially after being taken off the hives for some time, when the honey was inclined to ooze through the cappings. I suspect the old honey, perhaps a little soured, acted somewhat as yeast. At any rate, I should not like to get along without bait sections; but they must have no honey in them, and must be cleaned out thoroughly *by the bees*. C. C. MILLER.

Marengo, Ill., Aug. 16.

Your cage is not really original, as you say; but a few old things, doctor, when revived in a little different form, oftentimes prove to be more valuable than the new. I know your cage will work all right, and, so far as introducing alone is concerned, it is perhaps better than any thing else—yes, even better than the Peet, when the apiarist desires to introduce his own stock into other hives on account of the great saving in time. Introducing by sliding the cage into the entrance during warm weather would work all right. I should

think. You will observe in the article below what I say in favor of the Benton cage.—We are glad to get the facts in regard to unfinished sections. So far as I remember, it seems to be generally agreed that unfinished sections that have no honey in them are valuable. E. R.

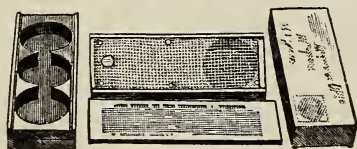
RECENT DEVELOPMENTS

CONDUCTED BY ERNEST R. ROOT.

SHIPPING QUEENS.

I have been aware of the fact for a year or two, that the Peet cage, though eminently successful for introducing, was far from being satisfactory for mailing queens. In view of this, for over a year back, in our queen department we have been testing different cages; and finally, during the latter part of last season, and the whole of this, we have been sending over half of our queens in the Benton. This is the cage that our friend Frank, now of Munich, Germany, first introduced for mailing queens across the ocean, and those who have received queens by mail from Mr. Benton can testify to the remarkably good condition in which the queens were received, although they have come from Germany, across the ocean, and then across our own continent in some cases. I have felt that perhaps there might be a good many queen-rearers who were neglecting to avail themselves of a good thing, and hence I am glad, after a most thorough test, to mention it.

As Mr. Benton did not originally design it for introducing, however successful it might be for mailing queens across the continent, it would hardly be suited to our purpose unless it could be so adapted. It took very great ingenuity to modify it, as the engraving below will show.



BENTON'S MAILING-CAGE, AS USED AT THE HOME OF THE HONEY-BEES.

The figure on the left shows the block as bored out ready for the reception of the bees and candy. Its outside dimensions are $4\frac{3}{4} \times 1\frac{1}{2} \times \frac{3}{4}$. Three holes $1\frac{1}{2}$ in diameter, by $\frac{3}{8}$ deep,

while the center one has no opening except a communication through the end hole. A piece of stout manilla paper covers the center and candied hole, and then wire cloth covers all three. The feature of this cage is, that for warm weather the bees can seek the end hole, with ample ventilation through the saw-cut in one corner, and by the wire cloth, which has a direct communication from the outside. For cold weather, or when the bees, perchance, go over the mountains, they will naturally huddle into the center hole, where it is warmer. To introduce, simply follow directions which we print on the nice clean basswood cover, as seen below:

The hole through the wire cloth, through which the hive bees eat to the candy, will be seen in the cage near the center. To put the queen into the cage, the wire cloth is slid back, and the bees are picked up individually, one by one, by the wings, until twenty or thirty have been put in, the number depending upon the weather, after which the wire cloth is tacked down. The cover, with printed directions as below, is tacked over the cage covering the wire cloth, with four half-inch wire nails. To mail, with a coarse pen we print the directions in a neat back-hand lettering, which most of the clerks in the office know how to do. A two-cent stamp is then put on at the right, and the cage is ready for California or any other remote point in the United States, without wrapping or string.

The almost universal testimony of our customers is, that the queens arrive in these cages in splendid condition. Whenever a Peet cage fails to deliver the queens, they are always replaced in the Benton. With the exception of two or three instances (when we put in only three attendants) during our large queen-trade this summer and part of last, it has been successful. Its great superiority in mailing, over the Peet, has been so very marked that we have about decided to use it entirely next season. As to the comparative merits of the two, the card below speaks for itself. It seems we had sent our customer some queens in the Peet cages. They, failing to go through, were replaced in a Benton cage, and this is the way our customer wrote:

The queens came this morning, no dead bees in either cage. They were just as lively as when you took them from the hives. I don't want any more queens in the Peet cage. E. D. HOWELL.

New Hampton, N. Y., Sept. 6.

Not long ago we sent twelve queens in Benton cages to Reno, Nevada. Our customer, Mr. W. K. Ball, writes of their condition as follows:

Directions for Introducing with the Benton Cage.

Before introducing, be sure that the colony is queenless. A colony long queenless is not so good as one lately so. To introduce, pry off the cover, and note the condition of the queen. Lay the cage under the enamel cloth or quilt, on top of the frames, directly over the cluster, wire cloth down. If the weather is cold, insert the cage between the frames in the cluster. In 24 or 48 hours, by means of the opening to the candy through the wire cloth at one end, the bees will eat through the candy, when they will be ready to accept the queen. Unless the queen appears feeble, do not examine again for 48 hours. If she is not yet released, and is in good condition, close the hive up again. The bees will shortly release her. The point is, the bees should release the queen themselves. While this method gives general success, we can not guarantee safe introduction. We only guarantee delivery of a queen alive and in good order. If the queen is dead upon opening this package, notify us at once and we will replace free of charge.

A. I. ROOT, Medina, Ohio.

are bored just close enough to leave an opening from one to the other. The further one is filled with candy. The other two are for the bees. The end hole provides an abundance of ventila-

The twelve queens all arrived O. K. They are very nice. W. K. BALL.

Reno, Nev., Sept. 15.

Mr. J. D. Fooshe, who has had remarkable

success in mailing queens, not only in the Peet but in the Benton cage, says:

Nearly all I sent out single were in Benton cages, and generally long distances. I think my success this year has been remarkable. I think the Benton a better shipping and introducing cage than the Peet, and will give better satisfaction.

Coronaca, S. C., Sept., 1890.

J. D. FOOSHE.

Mr. Fooshe is a queen-breeder of no little experience. He has furnished us this season over 300 queens. We have received scores of testimonials, but we give the above only as samples. It is not practicable with us to send queens in single Peet cages to California.

As to introducing, the candy plan, with our customers, seems to have given fairly good results. The Peet method of introducing is certainly better where the queens arrive in feeble condition, because they are then caged right on to a comb, and are given access to cells of unsealed honey; but the Benton seems to deliver the queens not only alive but vigorous, and the candy plan is just as good for introducing good strong queens. All the timid beginner needs to do is to pry open the cover and lay the cage down upon the frames, and introducing, so far as he is concerned, is done. With the Peet plan, the A B C scholar may be nervous for fear he may not be able to draw the slide just right, and successfully cage her majesty on the combs, without pinching her head or letting her get away.

There are good reasons why the Benton cage delivers its queens in better condition. First, it is, to a certain extent, climatic. If the temperature, in going over the mountains, we will say, suddenly goes down, or the night turns cool, the queen and her attendants can go into the warmer compartment of the cage. If, on the other hand, it goes up, they can enter the end hole. With the Peet cage there is one large hole, one side of it covered with tin. The metal itself is cold, and readily conducts away the heat of the few bees and queen. Aside from this, as the mail-bags are often thrown with considerable violence from the cars, the concussion of the cage causes the bees to be jarred from one side of the compartment to the other, in the Peet cage, especially if they happen to be on the tin side of the cage; and a large compartment is much worse than a small one. Again, the tin slide is always invariable in width; and the wood itself, if it shrinks or swells, will cause the slide to work either too loosely or too hard. It would seem that, theoretically and practically, there are good reasons why the Benton cage is superior as a general mailing-cage. Our friend Mr. Benton deserves much credit for introducing it. I notice that one or two queen-breeders who are sending out queens in identically the same cage are calling it after their own names. Possibly they do it through ignorance. But Mr. Benton, I think, was the first to construct this kind of cage, and demonstrate its great utility for mailing queens, not only across continents, but across oceans, and it should be named after him.

CONVENTION NOTICES.

The Southwestern Wisconsin Bee-keepers' Affiliated Association will meet Oct. 8, 1890, in Platteville, Wis., at the residence of E. France, to commence punctually at 10 A.M., sharp. There will be a large turnout of prominent bee-keepers of the State. A question-box, free to all, in which any subject you wish discussed can be presented and answered. Let every one be on hand and bring in his report for 1890, starting at spring count, or May 1.

BENJ. E. RICE, Sec'y, Boscobel, Wis.

The International American Bee Association will meet in Keokuk, Ia., Oct. 29, 30, 31. Parties desiring to attend will obtain a programme, and hotel rates, by addressing the secretary. Further particulars will be given in the Oct. 15th issue. A large attendance is expected, as this is the first meeting of this association west of the Mississippi, and a number of the leading bee-keepers and bee-publishers have promised to be present. For further particulars, address

C. P. DADANT, Hamilton, Ill.

The next convention of the Turkey Hill Bee-keepers' Association will take place at the Turkey Hill Grange Hall, near Wilderman's Station, three miles southeast of Belleville, Ill., Oct. 30, 1890. All interested are invited. S. BRAEUTIGAM, 1 re.

ADVERTISEMENTS THAT DO NOT PAY.

SOME OF THE REASONS WHY THEY DO NOT PAY.

A. I. Root:—I will settle that advertisement, which, by the way, never brought me one inquiry.

J. B. LAMONTAGUE.

Winter Park, Fla., Sept. 15.

On looking up this advertisement that did not pay, we find it read as follows:

VIRGIN QUEENS.—Pure virgin queens at 50c each, or 40c each per 100. J. B. LAMONTAGUE.

Winter Park, Fla.

Now, when advertisements of virgin queens began to come in, I told Ernest that I had so little faith that they would be of value to anybody. I would advise not accepting them. If I am correct, he suggested, however, to let people try them and see what the reports would be. Well, the above report is just what I expected, and, in fact, what I am glad to see. The subscribers to GLEANINGS, to a man, have sufficient good sense to refuse to invest. I do not wish to be severe on those who have recommended sending virgin queens by mail. One who is very anxious to succeed could introduce a virgin queen, and get her to laying; but I think he would get along much faster, and with much better success, if he had queen-cells instead of queens; and I am not certain but that I should prefer to take larvae of the right age rather than a virgin queen that was old enough to have made a trip by mail. Friend L., we take pleasure in crediting you with \$1.20, which you wasted in advertising virgin queens.

ANOTHER ADVERTISEMENT THAT DIDN'T PAY.

I advertised my bees Aug. 15 and Sept. 1, 1889, and made no sales. Now, I paid this willingly, and did not consider you responsible in any way because I did not sell my bees. However, inasmuch as it is your own proposition to refund the money thus paid, and considering the fact that you have done so by others, you may place to my credit the amount paid you at that time.

B. T. BLEASDALE.

Warrensville, O., Sept. 12, 1890.

Friend B., you give us only another evidence that almost no one wants to purchase bees after the honey crop is over, especially in our locality. We are losing some money in this business of paying back; but, never mind: we are gaining in an experience that is valuable to ourselves as well as to our readers. But, just hold on a little. Here comes some testimony from the other side.

ADVERTISEMENTS THAT DID PAY.

Mr. Root:—Please stop my advertisement at once. My queens are all sold. Your journal is a first-class advertising medium. I will patronize you again soon.

F. H. PETTS.

Warsaw, Mo., Sept. 9, 1890.

I have sold 219 queens from my advertisement. Many thanks.

J. W. TAYLOR.

Ozan, Ark., Sept. 13, 1890.

My sales are amounting to a little over \$100 per month, as a result of my ad. in GLEANINGS.

Morgan, Ky., Aug. 25.

J. P. MOORE.

OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

QUESTION 169. 1. *Is there any advantage in having honey stored during clover bloom for stores?* 2. *Which do you prefer for winter—early honey, late honey, or sugar syrup?*

1. Yes. 2. Early honey.

Illinois. N. W.

DADANT & SON.

1. I think not, in my locality. 2. Sugar syrup first; and second, I have no choice.

Michigan. S. W.

JAMES HEDDON.

1. No, not according to my experience. 2. All are good. I think my bees winter best on honey gathered from the linden-tree.

New York. C.

G. M. DOOLITTLE.

No. If all are good, the one that is cheapest. We have often wintered our bees entirely on fall honey, and they wintered well.

Michigan. C.

A. J. COOK.

1. There surely is, if clover is the only source from which honey is gathered. 2. Sugar syrup; but my bees wintered splendidly last winter on fall honey.

Ohio. N. W.

A. B. MASON.

1. I think there may be. 2. I believe I should prefer the early honey, because it is more sure to be well evaporated, and the bees have all the time needed to fix it up just as they want it.

Illinois. N.

C. C. MILLER.

1. There is no advantage in keeping the best clover honey for winter stores. 2. Fall honey is the scape-goat, but not the cause of winter losses. Fall honeys are first-class winter stores, and better than sugar syrup.

Ohio. S. W.

C. F. MUTH.

In our location we have no fall honey that we can depend on for winter stores, so we always let the bees store basswood honey for winter stores. I have never used sugar syrup for winter feed.

Wisconsin. S. W.

E. FRANCE.

1. Yes. The advantage of having a better quality and better ripened honey. 2. I am a little prejudiced in favor of the sugar. I consider it as good as well-ripened early honey, and perhaps no better.

Ohio. N. W.

H. R. BOARDMAN.

1. Very likely there is; but the plan will not do for localities where the yield per hive is small. 2. I have had no experience with syrup, but presume it to be better than most late honey, and not so good as the best early stores.

Ohio. N. W.

E. E. HASTY.

1. Not here. In fact, I think I should prefer our fall honey to clover, as a rule. In some localities, clover honey would probably be better. 2. Good honey, when the bees gather it, whether early or late. If feeding is necessary, use sugar syrup.

Illinois. N. C.

J. A. GREEN.

1. I would give the preference to honey gathered in the height of the season; but there is hardly enough advantage, ordinarily, to justify the necessary trouble in securing it. 2. My experience from feeding syrup from good sugar (31 bbls. in one season) would make me favor sugar to any honey, or as good as the best of honey.

California. S.

R. WILKIN.

1. Yes, at present prices of honey in a locality where there is no fall or late harvest of dark honey. 2. I think sugar syrup, one year with another, is preferable. Yes, early honey is good; late honey is all right in an open winter where bees are wintered on summer stands.

Vermont. N. W.

A. E. MANUM.

None, except you would be sure of well-ripened honey. Honey gathered later in the season, if thick and capped over, is probably just as good. My order of preference is as follows: 1. Good thick honey, sealed over; 2. Sugar syrup; 3. Late honey, some unsealed; 4th and meanest, "bug-juice."

Illinois. N. W. C.

MRS. L. HARRISON.

1. Yes. 2. I prefer *good* honey, whether early or late. For the two last falls I have fed some colonies varying quantities of granulated-sugar syrup. The amounts varied from 2 lbs. up to 20, and the quantity fed was carefully marked upon each hive. Soon after taking them out in the spring I have carefully examined them, only to find them to average no better than those unfed.

New York. C.

P. H. ELWOOD.

1. Yes, if you can get good clover honey and save it for winter stores. You have the advantage of being sure of it. You might get as good later, but are not certain of it. 2. We generally save basswood honey enough to winter our bees till we see whether we get fall honey. Any honey gathered from flowers when the weather is warm and dry will winter bees. Honey-dew, or secretion from plant-lice, is what we most dread here.

Wisconsin. S. W.

S. I. FREEBORN.

1. This depends upon your locality. Here it is an advantage to have winter stores gathered early. 2. I prefer the early honey. Our late honey-yield is very uncertain. We have but little buckwheat, and bees are liable to store honey-dew. In such cases it is a real comfort to have several frames of early honey to substitute for the honey-dew. Those living in a buckwheat-growing country, and who are reasonably sure of a yield from that source, can depend upon it for wintering. It is a good winter food. Sugar feeding in this State and in Vermont is a practice of the past.

New York. E.

RAMBLER.

The general impression seems to be that clover honey, as a rule, is but little if any better than other honey well ripened and sealed up in the combs, although one or two suggest that the man who makes *sure* of surplus combs to provide destitute colonies will be less likely to let his bees starve for want of attention. These extra combs, carefully set away, make the matter of feeding a comparatively easy one. It does seem, however, too bad to use our best honey, when dark honey will answer almost if not quite as well. If, however, one depends on fall honey, and does not get any, he is quite apt to neglect them, and to suffer loss. Rambler suggests that sugar feeding in York State is a practice of the past. I suspect this is largely due to the fact that honey—especially fall honey—has for some time been rather low, and good sugar rather high. To prepare and feed sugar syrup is more trouble, and there is always more or less loss in getting it into the combs and sealed up. Those who have undertaken to

throw out honey that was already in the right shape for winter stores, and supply its place with sugar syrup, have found out to their sorrow what it cost to make the exchange.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

IS THE GARDEN PARSNIP OF MISSOURI THE SIMPSON HONEY-PLANT OF THE A B C?

On p. 120, A B C, there is an illustration of the Simpson honey-plant that is as much like our common garden parsnip as two black-eyed peas. Any way, how is parsnip for a honey-plant? Ten or fifteen years ago we let some go to seed, and it came up next year in the fence-corners, and in a little out-of-the-way place, and has kept every thing crowded out, and has not degenerated to this day. In blooming time it is literally covered with bees, sweat-bees, dirt-daubers, lightning-bugs, etc. You can see the honey on the little pods, with one eye shut. I think if that man on page 254 of the A B C were to see it some morning, he would turn a double summersault backward. This spring it crowded the path my wife used in going to the garden; and in order to get rid of it and the bees she took a mowing-blade and cut off the tops. She is not afraid of a mowing-blade or a hoe-handle. When it had been in bloom quite a time, and where it was cut off, it threw out another set of branches and blooms, and gave the bees a second crop to work on.

J. D. WHITTENBURG.

Marshfield, Mo., Aug. 25.

Friend W., this is a little singular. We raise parsnip seed ourselves, and have for some years, but I do not remember of having ever seen a honey-bee on the bloom. I think you are mistaken about the Simpson honey-plant being like the parsnip. If you have the two side by side you will see; but if parsnips should produce honey, somebody should locate near where parsnips are grown for seed on a large scale.

A BIG TESTIMONIAL FOR THE DOVETAILED HIVE AND THE SECTION-HOLDER SUR- PLUS ARRANGEMENT.

I will try to get the honey ready to ship by the middle of September. The bees are gathering honey very fast now, and the prospect is good for a month yet. The second crop of alfalfa is in full bloom now. I haven't help enough to keep up with my work. It is hard to get any one here to work with bees. Everybody seems to be afraid of them. I have one man to help me. We took off over 1200 lbs. of very nice honey today, mostly out of the Dovetailed hive. This hive, with section-holders, is the best one that I ever saw. If I had had all my bees in those hives I should have secured a third more honey this year. I see but one fault with them; that is, the bottom-bar. If the section-holder is too light it sags down when it is full of honey, and leaves too much space on top of the section, and the bees store in honey. I shall want 500 of the Dovetailed hive this fall.

W. K. BALL.

Reno, Nev., Aug. 31.

Thanks for your kind words for the Dovetailed hive. We note your criticism, and expect to make the bottoms of the section-holders a full quarter-inch hereafter.

CAN WE KEEP BEES AWAY FROM NEIGHBOR- ING WATER-TROUGHS?

Is there any way I can keep my bees away from my neighbor's well? They keep water in a trough for their stock. I have tried all I know, but still they go there. I have 45 good strong colonies. They are about 200 feet from the well.

JOHN BURR.

Braceville, Ill.

I presume, friend B., a good many of our readers will ask what harm the bees did, any way, at the neighbor's well. But I presume the trouble is, they are afraid of them, and imagine the bees came there to sting. It may be, too, that the children get them on their clothing, or possibly pinch them by accident; and as the neighbor feels annoyed, something should be done. Well, the only thing you can do is to provide as good a watering-place for the bees near home; and I would do this, even if it necessitated digging a well of my own. Then cut away all the trees or any thing else that keeps the sun away, and provide a lot of pebbly gravel for the bees to alight on while they are drinking. If you wish to make it handsome, put in some stones and shells. Fix in, also, some varieties of moss, and I think you can run a successful opposition to your neighbor's well. The reason I recommend a well is because nothing else, unless you have a running spring, will afford such a constant supply of just about the kind of wetness that bees prefer.

BEESWAX FOR MAKING SCREWS AND NAILS PENETRATE WOOD.

Did you ever try putting a little beeswax on a screw or nail that you wished to drive into hard wood? If not, it will be a revelation to you.

S. T. WALKER.

Forest Grove, Or., Aug. 11.

Friend W., what you mention is known to some extent, and has been, I think, before given in our back volumes. It is a very valuable fact. Some time ago we purchased a new and expensive machine for punching holes in our A B C books for wiring the paper-covered ones. The machine could not be made to work. There was not power enough in the thing to push the awls through such a great quantity of stiff hard paper. One of the girls, however, suggested that we first push the awls through a very thick sheet of beeswax. I do not know where she got the idea, but, presto! after they had been waxed they went right through the whole book without any trouble at all.

ALLEN'S HIVE-STAND.

I like your plan of an apiary, with a grape-vine trellis at the south of each hive, very much; but I think I have an improvement on the foundation of the hives. I use a platform $2\frac{1}{2} \times 4$ ft. in size, made of $\frac{1}{2}$ " lumber, nailed the short way, on two 2-inch-square cleats. This platform is set in the ground so that the top is level with the lawn. The hive is placed in the center from side to side, and six inches from the back, leaving, with the hive I use, about 12 inches in front. The advantage it has is, that it will not blow away in a strong breeze, as the

sawdust or sand you use is sure to do in our heavy winds. The grass and weeds will be effectually stopped, which is not the case with sand or sawdust, and, so far as I can see, it possesses all the desirable features of either. Cost in some localities might be a possible objection; but the sand would be as expensive as the lumber here, and I doubt not in some places it would be even more so.

We have had a very poor season in this part of the State, owing to hot winds and little or no rain. During the last week, however, we have had some good rains, and bees are doing a thriving business to-day. We can hardly hope for much surplus, though. H. C. ALLEN.

Rising City, Neb., Aug. 22.

Friend A., the very first hive-stands I ever used were made very much as you describe. I procured nice clean dry-goods boxes, or cases, from the stores, and sawed them in two in the middle, so that each made two. The objection to having them so large is not only the expense, but, more than all, that you jar the hives whenever you step on this hive-stand. And where they are so large, you are sure to put your feet on them, more or less, in managing your bees and going around your hives. Another thing, these large bases get out of shape in the course of time, especially when the hives get very heavy with honey. I finally decided that I wanted the alighting-board just as large as the bottom of the hive, and no larger; and then I began to use the cover of the Simplicity hive for a bottom-board, enlarging and contracting the entrance by pushing it forward on this same cover.

HONEY CANDYING BEFORE CAPPING, ETC.

The spring crop was a total failure. June and July were good. We never did get much honey here through the summer months before this year. From the middle of June to the first week in August our bees never did better—especially the Italians and hybrids. Those that were not bothered for increase stored from 35 to 50 lbs. of surplus. I think they gathered a good part of it from cotton-bloom. Lots of the honey would make sugar before it was capped over. I never saw the like before. I should like to ask, 1. What made it sugar, and where did it come from?

2. Will a hive that has ten frames in it, and half of them solidly filled with honey, and the other half of them $\frac{2}{3}$ honey and $\frac{1}{3}$ brood, winter well in this climate or not? I never had them so nearly fill their brood-chamber before.

3. Does the fertilization of a queen affect her drone progeny or not? I have a book treating on bee culture that claims that it does. I have been watching this very closely for some time. I breed all my queens from an Italian queen that I think is pure. I notice that the drones from the queens that produce hybrid workers are not as uniformly marked as those of ones that were purely mated.

Decatur, Miss., Aug. 28. J. R. CLEVELAND.

1. Certain kinds of nectar will candy very soon after it is gathered, and we believe this has been before reported of the cotton honey. Will some of our Southern contributors please enlighten us? 2. Yes, we should say a colony under the conditions named ought to be in good condition to winter. 3. The fertilization of a queen does not affect her male progeny—at

least, the evidence so far is to this effect. Drones from the same queen will sometimes vary greatly in color. The drones from our imported Italian queens are sometimes almost black, while others from the same queen have one or two yellow bands. But we have always found that the drones from imported mothers, whether light or dark, produce three-banded workers if the queens are pure.

THE SEX OF THE EGG DETERMINED BY THE QUEEN'S GUARD.

In reading Dr. Miller's article in GLEANINGS, Aug. 1, a point overlooked by him and all others I have read, came to my mind. The queen's guard is always with her; and when she lays an egg in worker-cells one of the workers goes into the cell and fixes it, taking more time in "fixing" than the queen does in laying the egg. Now, what I want to know is, Does that part of the ceremony have any thing to do with determining the sex? I have noticed this for a period of six years or more, and am now of the opinion that it must have something to do with the sex of the bee. Have you ever noticed this act, on the part of the workers? If you watch the queen when laying you can not fail to see it. The long drouth has been hard on bees in this part of the country. Every thing is dried up, and there is no honey to gather.

Ezbon, Kan., Aug. 16.

DAVID ROSS.

Friend R., I have noticed exactly what you describe; and I have often wondered, also, why this bee that crawls into the cell after the egg is laid should stay such a length of time. With our observatory hive we used to get impatient because these bees prevented us from getting a glimpse of a new-laid egg. You may be right about it; but how in the world are we going to prove it, or determine what the bee does while it has been so long in that dark cell? A cell made of very thin glass might enable us to see what the bee seems to be doing with the egg.

DEATH OF JUDGE ANDREWS.

Our dear friend and brother, Judge W. H. Andrews, of McKinney, Texas, died August 6, 1890, of paralysis. One among the best lights in bee culture that we had in the South has gone out.

W. R. GRAHAM.

Greenville, Tex., Sept. 19, 1890.

You are right, friend G. Judge Andrews has been one of the lights in bee culture, especially in the South. We remember his quiet, kindly ways at the various conventions he has taken the pains to attend; and, by the way, is it not sad that we have not had the pleasure of meeting as many of the great bee-men of the South as we did a few years ago? As the older ones pass away, and the boys take up the responsibilities, let us be careful that these pleasant old-time relations and hand-shakings between friends not only north and south, but east and west, be not passed over nor forgotten.

SUPERSÉDURE AFTER THE YOUNG QUEEN STARTS TO LAYING.

You ask if it is the rule that the old queen is allowed in the hive until the young one gets to laying. I think it is, for I have had half a dozen or more old queens superseded this spring, and in every case I found the young one laying

for a week or more before the old one was *deposed*. This I know to be fact, for I have seen both at the same time, sometimes both on the same comb at work laying, not seeming to care for one another.

ARTHUR F. BROWN.
Huntington, Fla., Aug. 8.

DO WINGS OF CLIPPED QUEENS EVER GROW OUT AGAIN?

An old acquaintance who has kept bees for years is under the impression that queens' wings that have been clipped will grow out again, and become perfect; and I have been puzzled more than once to find queens with perfect wings where I was sure I had clipped them. On searching the combs I failed to find the cells where young queens were hatched. I am satisfied, from considerable experience, that, when the queen's wings are clipped quite close to the body, they don't grow out again; but when the tips only are cut off, I'm not sure about it. Can you clear the matter up? ARCH. DUNCAN.

Wyoming, Ont., Sept. 11.

Friend D., we think you are mistaken; nevertheless, it may be well to watch carefully and see whether queens with the ends of their wings clipped, or, say, with the thin gauze-like part cut off, ever do have it grow again. I have clipped queens' wings in almost all sorts of ways, and I never noticed any change afterward.

SUCCESSFUL WITH DOOLITTLE'S PLAN OF REARING QUEENS.

I have been very successful in queen-rearing the past season with Doolittle's plan, with the exception of one batch of 30 cells, which doubtless got chilled. The bees have commenced to drive out the greatly abused drones. My bees are in the best possible condition—plenty of stores, and gathering sufficient honey for brood-rearing.

BEE-ESCAPES A SUCCESS.

The wire cone bee-escape has worked nicely excepting where the bees were quite young. Such bees are seldom in a hurry to leave their loafing-place.

THE THICK OR HEAVY TOP-BAR FRAMES have the preference in my apiary—no brace-combs nor sagging to contend with.

Reinersville, O., Aug. 22. J. A. GOLDEN.

POLLEN ON THE BACKS OF BEES.

Inclosed find several bees with yellow spots on their backs between their wings. This appears to be a sort of scab, or hard substance. Several of my colonies show these spots more or less. The bees appear as lively as any in the colony. Is this a disease, or what is it? If a disease, what will cure it? I saw some correspondence a while ago in GLEANINGS inquiring whether bees lose their stings when they sting each other. I saw a case of this kind a few days ago. An Italian was trying to get into a nucleus of black bees. One of the blacks clung to him, and they went spinning around, top fashion, and soon they were trying to pull apart. The Italian had stung the black bee in the abdomen; and in getting apart, the Italian lost his sting, leaving it in the black bee. SUBSCRIBER.

West Troy, N. Y., Sept. 9.

Surmising that the yellow spots, or lumps, might be pollen, we forwarded the letter to Prof. Cook, who replies:

The spots on the backs of the bees in question are simply masses of pollen. I have often seen just such curious plasters. At this season our

bees are often plastered up with the white pollen of the snap-dragon. The yellow pollen grains on these bees are spherical. I do not know what the kind of pollen is. It does no harm to the bees. They will be cleaned up after nightfall, and the pollen saved for bee-bread.

Agricultural College, Mich. A. J. COOK.

BLACK WEEVIL IN THE WHEAT, AND HOW TO DESTROY: STINGLESS BEES, ETC.

What is the best way to keep the black weevils out of wheat? We are pestered very much with them. Is there any preventive for it?

I will tell you how the \$3.00 queen I bought of you the first of August, 1889, has done. I have had three swarms and two extra queens from 1 lb. of bees and queen in a little over one year. How does that do for a beginner? I haven't taken any honey this year, as there hasn't been any thing for bees to work on here since the first of April. It is all the bees could do to find enough to live on. I love to read GLEANINGS, and am always anxious to have it come. Tell us more about those stingless bees you spoke of.

H. N. JOHNSTON.

Mooresville, N. C., Aug. 30.

Thanks for your kind words. The stingless bees have all "petered out." The cold nights, or something else due to this climate, does not seem to agree with them. In regard to the weevils, we forwarded the item to Prof. Cook, who replies:

The only way I know of to keep weevil out of wheat is to put the wheat in tight, *very* tight, boxes. This is quite impracticable, and so we must be able to kill them when they are once in. By the use of bi-sulphide of carbon, as described in my late Bulletin, this can be cheaply and effectively, and, with due caution, safely done. This can be got at wholesale of Edward Taylor, Cleveland, O. As this will not injure any thing about the mill, and will kill all insects, it is the specific.

A. J. COOK.

Agricultural College, Mich.

PROFANITY AMONG RAILROAD MEN.

You seem to think railroad men are more given to profane language than any other class of people. I do not think so. Very few of the railroad men with whom I come in contact (and I have been one for fifteen years) use profane language. I never swore an oath in my life, and have a brother in the railroad business who does not swear. Neither is a professing Christian, or, at least, we belong to no church. I think I would report any railroad man should I hear him use as profane language as I have heard doctors, lawyers, and drummers use. It is something very disagreeable to me, therefore I notice it probably more than most people would. Why do you address that request to railroad men?

W. H. BUTLER.

Clifford, Ind., Sept. 13.

Friend B., I am very glad indeed to get your report. I addressed my request to railroad men, because in our State, and, in fact, almost everywhere else where I have traveled, there was more swearing among the railroaders than among any other class; perhaps I should say, rather, among the men who handle freight, the men who construct our railways, and the cheaper help employed all along the line. Perhaps it is more true that men are more given to swearing who do heavy work that does not require very much skill, and consequently does not afford very much pay. And while I am writing,

the idea occurs to me that their profanity may be one reason why their pay is small. It certainly dulls the intellect and blunts the moral perceptions to be constantly in the habit of taking God's name in vain.

WHO IS MOST TO BLAME?

Friend Root:—I love to read your home talks. You will never find out in *this* world the amount of good you do. I once spoke to a bright young man about drinking so hard. I said, "You ought to quit for your mother's sake, if for nothing else. She is a leader in temperance work, and president of the W. C. T. U." He replied, "Yes, I know it. But," said he, "if she would stay at home and mend my clothes, and see to my meals and other matters, I think she would be doing a better work." Is she working, do you think, for stars in her crown in this world or that which is to come?

Evansville, Ind., July 21. A HOME MAN.

My good friend, I thank you sincerely for the very high compliment which you pay me; but I fear you are getting on dangerous ground when you criticise so severely one of the W. C. T. U. workers. I have heard young men reply just about the way that one did, and I know mothers sometimes make mistakes in the way you have indicated; but I do think the young man has given us a glimpse of a very, very bad heart. When a youth can publicly and unblushingly shift the blame from his own shoulders off on to his mother, he has got pretty far down on his way to hopeless ruin. I know that many of our prominent temperance women—at least those who have worked hard for great temperance reforms—have been in a like way criticised; but I think that we who perhaps stand off at one side should be very careful about finding fault. It is an exceedingly easy matter to find flaws in the character of every good man and woman. Let me give you a little glimpse of the other side of the question. It is bad for a *father* to be away from his family. Now, in view of this, suppose all *good* men should stay at home, and give, as a reason, that their first duty was to attend to the bringing-up of their children. Where would our nation soon be if this were fully carried out? There are many mothers in my employ; and when they come here to their daily work, their children can not well be brought with them. Some of them, of necessity, are out in the streets, and very likely are much in need at times of a mother's watchful care; but there seems to be no other way in the world for the mother to earn her daily bread.

CAN A PROFESSOR OF RELIGION CONSISTENTLY USE TOBACCO?

At the time of my conversion, at 21 years of age, I both chewed and smoked, and had for about 7 years. At that time, 1871, I had not heard any thing said on the subject; yet after receiving the witness of the Spirit, in about a week, or at most two, I began to be depressed in spirit on account of my tobacco; and I looked around to see what others were doing. I found the class-leaders and other prominent members using it, so I continued to also, but lost the real

sense of God's presence in my soul. I went on in that way, fighting against my convictions, and professing religion for six months, when I attended a camp-meeting, and awoke to the fact that I was backslidden in heart. I gave it up. God returned to my heart, and took the appetite all away, and it has never returned.

Vinland, Kan., Sept. 12.

D. H. WELCH.

Friend W., I am exceedingly glad to get this testimony of yours. I have had no experience with tobacco; but I do know that there is very little chance for God's spirit to obtain a lodging-place in the heart while we are conscious of holding fast to something that duty and plain common sense admonish us to give up. No wonder God took away the longing for tobacco. You gave it up for his sake, and you have your reward.

NOTES AND QUERIES.

The honey crop was good this year. Average, 55 lbs. per hive. IRA L. DONALD.
Smyrna, Fla., Sept. 8.

Bees are doing well now, getting plenty of stores for winter at last, but that is nearly all of it; but I am glad for that.

PETER BLUNIER.

Roanoke, Ill., Sept. 18, 1890.

PROSPECTS GOOD FOR FALL HONEY.

Our bees did well in spring; but dry weather came and stopped work in the sections. The prospect for fall honey is pretty good—plenty of goldenrod, and some 'Spanish' needle, and bees are working well.

D. H. WELCH.

Vinland, Kan., Sept. 12.

A UNIQUE WAY TO GET CAKES OF WAX OUT OF PANS.

Tell Dr. Miller that, when he wishes to clean the dripping-pan of his solar wax-extractor, to turn the pan bottom up and pour a little boiling water over it, then with a table-knife loosen the edges of the mass and it drops out all in a cake.

G. B. REPROGLE.

Centerville, Iowa, Sept. 4.

[Many thanks, friend R. The idea is ingenious, and will work, without doubt.]

GETTING BEES TO TAKE THE HONEY FROM COMBS PLACED IN AN UPPER STORY.

How can I get bees to take honey from combs placed in an upper story, or anywhere else, so the colony that I want to have honey gets it? I have no extractor.

W. R. TATE.

Goodman, Miss., Sept. 8.

[There is no quick way. If combs are placed in an upper story in the fall, with an enameled cloth between, but turned up a little at one end, the bees will, if short, carry the stores below in time, say in a month. But it is not very satisfactory at best.]

HONEY FROM JAPANESE AND NONE FROM THE COMMON BUCKWHEAT.

I sowed a late piece of Japanese buckwheat, which is furnishing a nice flow of honey now. The common buckwheat has ripened, and the bees did not work on it at all. They are working early and late now.

J. W. CHAPIN.

Winfred, S. Dakota, Sept. 1.

[We are exceedingly glad of the above report, because on page 677 of our last issue there was

one just the other way. The truth of the matter is, I presume, that the varieties differ enough so that one may yield honey when the other does not.]

BURDOCK.

You fail to mention burdock as a honey-producer in the A.B.C. I find it very productive, bees working on it all day. CHAS. MATHER.
Cascade, N. Y., Aug. 4, 1890.

[Burdock has been frequently mentioned as a honey-plant. In fact, I have seen almost as many bees working on burdock at one time as I ever saw on some of the much-landed honey-plants; but it is a fearful weed, and draws heavily on the soil. Who would think of raising burdocks, even if they did give honey by the tons?]

STOLEN BEES.

Last Friday night one of our colonies was stolen. Do you think they will come back again, if they are let out? They have them penned up yet, so I guess they have had no chance yet. They are a few hundred yards off from my house. JOHN HERBSLEB.

Galena, Ill., Aug. 21, 1890.

[To be sure, the bees will come back again, if they have opportunity; but, now, are you not making a mistake? Is it not only a surmise that they are within only a few hundred yards of your house? I should hardly think they could be kept confined nearly a week, as you state it.]

MYSELF AND MY NEIGHBORS.

A righteous man regardeth the life of his beast; but the tender mercies of the wicked are cruel.—PROV. 12:10.

In my talk about the new railroad, I touched upon the matter of cruelty to the horses but incidentally. I told you that the men who let their passions run away with them, and yield to the impulse to give vent to these passions in oaths and curses, using every sacred word they could bring to mind, are the ones that are abusive and inhuman to their horses. The latter part of our text tells us that even the *tender mercies* of the wicked are cruel. As they are crowding this railroad to its utmost, they have offered large pay for men and teams; and a good many who own only very indifferent teams have been induced to put them to drawing dirt by the stimulus of the \$3.50 a day which they offer. A good many boys are also set to work to drive. Boys do not cost as much as men, so you see there is quite a chance for speculation. I had heard, before they came on to our grounds, of cruelty toward the horses, and I was determined to do what I could do to restrain it, and, as much as possible, in the same line I undertook to restrain the profanity—by the spirit of Christian kindness. Many of the teams, being unused to such work, were exceedingly awkward; and the experienced man—that is, experienced in railroad business—made no allowance for the poor dumb brutes on this account, but cursed and pounded the poor beasts when they were doing the very best they knew how. By the way, did you ever, in your sober moments, think what a cruel and ungentlemanly thing it is to abuse anybody—man, child, or dumb brute, because of inexperience? It was in my mind to include women; but the thought of being cruel to a woman, when she is doing her very level best, came so near to stirring up my feelings that I thought I would not put her in the list. Surely none but an intemperate man

would think of being harsh and cruel to a woman because she did not understand what is wanted. But we are going to talk about horses to-day, and not about women. Most of the teams on the work were too poor in flesh to do their work well and easily. I am very well aware that work-horses may have too much flesh to stand heavy work day after day; but I believe that this extreme is seldom met. The poor horses seem to be willing and anxious to please; in fact, the greater part of them showed more life and energy than I expected horses to show when their ribs and joints are almost protruding through the poor hide that covers the animals. How I *did* long to see what the effect would be to give them all the grain they could consume, especially while they were on the job! Quite a few fell down from exhaustion (or swearing—which was it?) and had to be turned off by the boss as unfit for the work.

One afternoon, toward night, I saw a poor heavy horse panting to such an extent that its eyes fairly stood out in their sockets. As it pulled the scraper to the top of the heap of soft dirt, it swayed one way and another, and trembled as if it were almost ready to fall down in its tracks. Besides this the blood was streaming from one of its legs. It had been hurt in getting through a bridge some days before. A bandage had been put over the wound; but the heavy work had knocked off the bandage and started the wound afresh, and loss of blood, probably, had something to do with the exhaustion of the poor animal. It seems to me, that a man who would work a horse under such circumstances, simply because by doing it he could get \$3.75 a day, ought to be horsewhipped himself. But this would not be the method taught by Christ Jesus. I saw him before I had reached the spot, and asked the boss why he allowed the man to work with such an animal. He said there were certain reasons why he did not like to interfere, but he had been rather hoping somebody who belonged to the Humane Society would come around, and then he would have good authority for ordering the man to take his horse home. Is not this a hint to the workers in the Humane Society? The team came near where we were standing. Said I, "My friend, do you think it right to work a horse under such circumstances?"

"Well, I suppose it is not exactly the thing. But I have no other horse to put in; and unless I use him it throws me and my other horse out of work."

I told him I was a member of the Humane Society, and I thought he had better not work the horse any more, especially while he was in that condition. The boss then very readily indorsed what I had said. Now, friends, he who acts as an officer of the Humane Society needs much skill and judgment, and knowledge of horses. A horse really *unfit* for work, in the hands of an ignorant, swearing man, and one with poor judgment, might do very well, and work without very much fatigue, under the guidance of an experienced, competent, kind driver. In all my work in life I am pained almost constantly to see waste labor and waste motions. In this simple matter of drawing dirt, the horses were sometimes driven many weary steps that were entirely useless. After the scraper is emptied, the thoughtless driver frequently goes quite a distance, instead of turning back promptly as soon as his work is accomplished. Awkward, blundering drivers pull the horses away over to one side until they are out of the path, and then, with curses, jerk them back the other way, when the fault was entirely that of the *driver*, the poor horse having been *perfectly* obedient to the pull on the lines. Why, it is enough to make one's blood

boil to see it. And this matter of letting boys who are too small or too young, worry a team until it is tired out; and I have seen horses thus worried and fatigued, when, if let alone, they would have shown much more intelligence than their driver.

If I was disgusted with mankind during these days of experience, I was at the same time taught to reverence and respect the intelligence of these dumb friends of ours. When the cut became quite deep, steep passageways were made through the bank, to enable the horses to get up with their load. As the pile of dirt became higher, these steep roadways became steeper and steeper. The horses that had had no drill on the work could not go up and down them. But these faithful friends soon learned to plant their feet where the road was so steep that they literally slid down, as boys slide down the cellar-door. They soon learned, too, to do their work carefully and easily if they were not annoyed, yanked, jerked, and pounded by a blasphemous driver. Did you ever watch a horse when its driver was swearing at him? See how his naturally bright eyes settle down into a kind of dull, hopeless despondency. His ears, that are usually ever in motion to catch the least word from his master, drop back sullenly as if he had decided that it is of no use to try any more; that the only thing was to plod along as best he could—"bear the toil, endure the pain." Dear friends, do you ask why I stop in quoting these closing lines of my favorite hymn? I stopped because the poor horse, so far as we know, has no such support as we have. The God who made him has never given him, so far as we know, a promise of some wonderful reward in the unknown future, if he is patient and faithful and kind. If this is true, oh how much more does it behoove us to treat him as one of God's creatures, and, out of respect for the great Father above, if nothing more, treat him kindly and lovingly; to recognize him as a great and precious gift from the loving Father above!

Of course, our big Clydesdale team was working near them, moving the rich soil from the surface of the ground. Most of the railroad men stopped, sooner or later, to admire and point out the contrast between such a team and the rest on the job. Our team did their work easily and well. They filled the largest scrapers on the ground, without sweat or fatigue. Somebody started a report—I do not know how—that there was not a man on the grounds who could stall them by setting the scraper down into the hard ground. These horses have seldom if ever been tried to their utmost. They hardly know what it is to undertake to move something and fail. The boss came along one day, and jestingly asked the driver if it were true that nobody could hold them with a scraper. Several were standing around, while the driver quietly remarked that he did not remember that anybody had ever yet stalled them. Now, there was a hard-wood stake a little ahead that needed grubbing up, but nobody had yet got around to it. It was pretty well covered with dirt. The driver knew where it was. As the boss took hold of the scraper and loaded it up, the driver turned the team in the direction of the stake. Just as the boss got ready to show his skill, the driver gave the big team a signal. There was a burst of merriment as the boss picked himself up from over between the horses; and he just happened to remember then that he had urgent business on another part of the grounds. Finally, as the men were crowding upon us with additional teams, old Charlie, who draws the market-wagon, was hitched to a smaller scraper, and set to work. I intended to get along soon, and give the driver directions; but something

called me; and, before I knew it, good faithful old Charlie was panting for breath, and would probably have come pretty near falling down too had not somebody interfered.

Let me explain a little. Old Charlie was purchased some time ago, at an astonishingly low price, for so large and fine-looking an animal. After the purchase, however, we discovered the reason for the low price. He was wind-broken. He will pull an enormous load, and walk faster than any other horse I ever saw, if you keep watch of his wind, and do not let him overtake it. With a careless driver, however, and one who is unused to his infirmity, he will, if pushed, get out of breath and fall down in the road. He has done it several times—not of late years, however, for I will not permit it. At one time in his life, old Charlie was a celebrated walker. He would walk ahead of any horse in the surrounding country; and he is often now so ambitious that, if not constantly watched, he will lose his wind. Over two years ago, during the hot, dusty weather, he gave out, and most of the horsemen said he was used up, and that I had better "trade him off," or take him off and shoot him. I sent for a veterinary surgeon, and he said the horse was just as good as he ever was, if rightly treated. We had been feeding him dry chop feed. The surgeon forbade that, and said we should give the horse corn fodder, little potatoes, or any thing that he seemed to want, instead of dry grain, and he would do his work without trouble, providing we remembered to keep careful watch and not let him go beyond the limit of his wind. To-day you could not buy old Charlie for \$150. With all Charlie's ambition and great strength, he is nervous and impatient at any thing like being yanked and nagged, especially by small boys. If anybody comes around him whom he thinks may be inclined to take delight in worrying him, he bites savagely. I have been told that boys punch him and pinch him for the purpose of seeing him act up. If he gets worried or excited, it increases his infirmity. By the way, friends, isn't that the case with almost anybody? Well, after I explained to the driver Charlie's good points as well as his weak ones, I told him that he must work on all the dirt that was to be drawn a *short distance*—let the big Clydesdale team take the long pulls. In a little time I saw Charlie doing "big work," and doing it easily, and apparently enjoying it. Several remarked, before long, that old wind-broken Charlie would move more dirt than many of the *teams* on the job. I spoke to him approvingly several times as I passed by; and knowing his disposition as I do—his wonderful energy and ambition—it just seemed to me as though I should like the fun of working side by side with old Charlie, every day of my life; and I am sure I could make him happy; and I feel equally sure that old Charlie, with his great energy and faithfulness, would make *me* happy. Dear reader, is it your good fortune to own a horse or to work with one? Make that horse your friend, and I assure you he will do his best to make himself *your* friend. Last night my wife asked me if it did not seem strange that man and wife should get along so nicely together, while each one would get along so uncomfortably without the other. I replied that I did not think it at all strange, because it is a relation of God's own planning; and it seems to me just now that the relation between the horse and his owner is much that same way. Neither would be happy without the other. But when the two work together in a loving and friendly way, it seems to me as if God's blessing rests on both. I do verily believe that we are only carrying out God's plan in the beginning, in these relations with our domestic animals; and whenever we fall in line,

with God's plans we may be sure a blessing will follow.

A few days ago a horse was wanted to pull brick, by means of a pulley, to the top of an elevated reservoir. One of the Clydesdales happened to be in the stable. The man who usually handles him was away with the other. The question was asked if it would be safe to set Jack at that work. A wrong move might endanger the lives of the workmen on the scaffold. I told them that Jack would be perfectly safe if a good man would stand by him till he comprehended what was wanted of him. As his surroundings were strange, and his daily companion was absent, he seemed at first a little fidgety; but I carefully explained to him (you need not smile at this) what he was to do; and after he had taken half a dozen trips he stopped promptly when the mason called from the top of the tower to hold on; and in fifteen minutes more, to the merriment of the boys, Jack, after hearing the call, "Hold on!" turned around with his whiffletree and marched back to the point of starting, without any help from any one. The mason now called from the top of the tower, saying that we should put a little bit of white board on the grass, right where Jack was to stop, and that the horse would walk right up to that board, and stop every time. This he did all the rest of the day, without making a single mistake or blunder. It was evident that he kept watch of the movements, for he looked up to the top of the tower occasionally, as if he were taking in the whole plan of proceedings. I would rather have a smart horse for my helper than a dull man. The horse generally has his mind on his work, and knows what is going on, while the man sometimes does not.

Now, there is one point I think I must take up in this paper, or else some of my good friends who know more about horses than I do might call a good deal of my talk all "folderol." It is this: While kindness and gentleness and love are always in order, firmness and decision are also needed almost constantly. A few days ago we wanted the Clydesdales to pull a stick of timber up to the large underground reservoir. There was a roadway down into it, where they draw out the dirt, and the horses evidently took it for granted that the driver meant to drive them down into that fearful hole. *He* knew what he wanted, but *they* didn't. They began to snort and prance, and finally one turned one way and one the other. Lines and traces were getting badly tangled. Three or four men took hold of them, and tried to straighten them out; but what can a man do with a horse of such tremendous weight and strength? Why, a man's strength would be as nothing, and I expected to see a regular smash-up. The driver gathered up his lines, and, with a yell, commanded the horses to straighten out, hitting them a good clip by way of emphasis. His voice, which they knew, was of more weight to them than all the men whom they *did not* know, and they straightened out in their places in a twinkling. They trembled with excitement; but for all that they obeyed orders. A thousand times, valuable human life might have been saved by prompt energy and decision, by the free use of the whip, or perhaps a club, or any thing that could be got hold of, to let them know who is master; and a man or woman who would complain of cruelty to animals under such circumstances, is simply weak and childish. Of course, the driver should hold his temper, and not a single blow should be struck more than is necessary to enforce obedience; and under no circumstances should they be pounded or whipped after they have been made to obey. Old Charlie draws kindling-wood every afternoon. The new building, how-

ever, has cut off his regular path so that he has to back around in order to load up the kindling. But this could be managed easily if he would go into a narrow alley and back up until his nose nearly touches the new building. His driver said he could not make him do it. I told him he must whip him until he *did* do it. He said whipping did not do any good. By my orders he showed me how he acted. Charlie went almost far enough, then pranced and snorted, and, in spite of the whipping, he backed the wagon the wrong way, and smashed it into some other things where he might have done injury. I looked around until I found just what I wanted. It was a narrow strip of barrel-stave. Charlie saw what I had; but he had evidently made up his mind that he was not going up on that walk, even for *me*. I told him where to go, and led him up. He stopped as before, and I gave him one pretty good whack on his great fat haunches. He went ahead a little further, and then threw up his head and began to back as before. Then I gave him such a slap it made him grunt a little. But he was not quite conquered. The third blow I gave with all my might, and he walked up as meek and obedient as a child. Since then he goes right up in that place without any more foolish actions and display of his notions and stubbornness. Now, a horse, like a child, sometimes enjoys this sort of fun—a conflict with authority. It is rare fun for him to discover that his master has not force and decision enough to make him do what he ought to do; and it is like cows with a broken fence. The more times they jump over, the more and the higher they try to get over after it has been fixed. This question of who is going to boss things is sure to come up sooner or later between the horse and the owner. The owner should be careful about insisting on any thing that endangers the horse's safety. He should also beware of giving command where he is not well prepared to enforce obedience. Horses have better memories than we do. I have sometimes thought, too, that they have a wonderful faculty for taking a man's full dimensions. Let a stranger take hold of the lines or attempt to give orders, and they *very soon* decide how much "lord of creation" there is in this new master or new driver. Now, do you suppose a horse thinks less of you when he finds that you are not to be trifled with, and are fully competent to rule? Why, bless you, no. It is with a horse as with a child. His *love* for you is in close relationship to his *respect* for you. He loves the hand that *makes him mind*, a hundred times better than the one who lets him have his own way in a feeble, helpless sort of manner.

Now, dear friend, whose eye rests on these pages, if you have any thing to do with horses, please look upon them as one of God's most precious gifts. Do not scrimp them in feed; do not scrimp them in nice pure water. Take pains to carry them the apple peelings and cores—that is, if you can not afford to give them whole apples. If they like potatoes, as Mike and Charlie do—yes, and Billy (he is the one that ate the peck when they were \$1.20 a bushel), give them the small potato-peelings. Sift out the dirt so they will be nice and clean. Give them the sweet corn after the ears are plucked, and all the dainties that they like, that the house affords. Teach the children to love them and care for them; but at the same time, if you would win their respect as well as their love, teach them to be obedient. Be *patient* and *long-suffering* with your horse. He knows when you give way to temper, just as well as any human being knows; and you sink in his estimation the minute you do so. *He* knows when you strike him or scold him for something

that was not his fault; and he is ready and quick to write your name down in that wonderfully accurate tablet of his horse memory. You can not apologize to a *horse* as you can to a *man*; and it will take you a long while to wipe out the memory of some undeserved insult. God gave you sense and reason and *dominion*; but he gave the noble horse, too, a kind of sense and judgment and wisdom that oftentimes comes very near the God-given intellect of humanity.

In closing, permit me to print again something that appeared in GLEANINGS for November, 1882.

My friend, are you and your horse good friends? Do you love him, and does he love you? Does he know, whatever comes up, that you are his friend? Do you know, whatever comes up, that he is *your* friend? Have you such a broad charity for him, that, when he makes a mistake, or doesn't understand, you are kind and patient with him, instead of calling him a fool, or saying he doesn't know anything? Has he such confidence in you, that, when you make a mistake, and once in a great while (?) speak cross, or "holler" at him, he will forgive it and not be stubborn and contrary? When you work together, are your relations of a truly friendly nature? Is the service a loving service on both sides? May be your horse is old; may be he is one of the dull kind; may be he is lame or blind; if so, and you are even a little bit of a Christian, you are all the more bound to bear with him. Don't you think old and broken-down horses can appreciate kindness? The kindest man I ever saw to his horse and cow is Professor Cook. I don't know but the kindest horse and cow I ever saw were Professor Cook's too. I have sometimes wondered whether they, too, with the rest of the Michigan people, know that he is professor of bugs and insects, and feel a little bit proud of their office of helping him along in his work in the Agricultural College.

If your horse is poor, I don't know how we can make any excuse for you; in fact, I don't know how God can excuse you. Starving the ground may not be a cruelty; but starving a horse, and then asking him to work hard every day, is one of the worst things I know of. If I wanted to pick out a Christian, I should look for somebody riding behind a horse that was fat, sleek, and happy. I don't so much care if he does ride in an old rickety buggy, for buggies don't get tired (only at the blacksmith shop) and *cross*; but when you are weak, faint, and hungry, how would you like to draw some stingy old curmudgeon through the mud? Our Jack is about 18 years old; but I have lately made the discovery, that, when he is fed regularly and well, and is watered at least three times a day, he marches out of his stable, with head up, as much as to say, "Hurrah, boys! come on with the buckwheat or rye you want sown; and if you have any hard work to do, just mind your whiffletrees are strong."

You see, Jack has all his life been celebrated for breaking whiffletrees; and when a load doesn't come, and he is urged the second or third time, he will lie down to work with an air that says, "All right, if you want something to come," and something *does* come too. Sometimes it is the whiffletree, and sometimes it is the whole forward end of the wagon; but to do this, he must have good food, and plenty of it. Now, mind what I tell you: Neglect of or unkindness to your horse will surely stand in the way of your peace with God, and your highest happiness here on earth.

Poor faithful old Jack! After giving a life of almost twenty years of faithful service to our family, letting each new baby learn to drive by holding his lines, and learn to ride by trying to sit astride of his great broad back; after carrying the whole family, singly or collectively; after pulling boxes and packages through the mud, for our whole factory, almost, and never flinching, poor faithful old Jack lost his life by the burning of our warehouse, March 7, 1886. He was the especial property of my wife, having been raised by her father; and now the only memento of this faithful old servant is a blackened horseshoe. May God help us to remember these household treasures while they are with us!

SPECIAL DEPARTMENT FOR A. I. ROOT, AND HIS FRIENDS WHO LOVE TO RAISE CROPS.

That art on which a thousand millions of men are dependent for their sustenance, and two hundred millions of men expend their daily toil, must be the most important of all—the parent and precursor of all other arts. In every country, then, and at every period, the investigation of the principles on which the rational practice of this art is founded ought to have commanded the principal attention of the greatest minds.

JAMES F. W. JOHNSTON.

STRAWBERRY-RUNNERS, AND HOW TO GET THE LITTLE PLANTS EQUALLY SPACED AT THE LEAST EXPENSE.

Terry, in his book, recommends letting the runners go—that is, with some care and directing, and finally, late in the fall, to cut out with a garden trowel, or similar implement, all surplus plants so that no two plants stand nearer than six inches apart. Mr. Pierce, in the *Ohio Farmer*, suggests that it is much cheaper to accomplish the same thing by spacing the runners, putting the little plant where it ought to be, and holding it down with a piece of dirt. We have for years practiced both ways, and we have also practiced letting the runners and plants follow their own fashion. Now, I am quite sure that very much may be gained in quantity and in size of fruit by judicious spacing; but at present I am unable to determine which is the cheaper—probably a combination of the two ways; and this is really the plan which Terry recommends. We have been in the habit of having boys take care of our strawberries to a large extent; but our Gandies and Bubachs, put out in July, have now set so many plants that it is getting to be a complicated matter for a boy. First, I tell them the runners must be swung around so as to be out of the way of the cultivator, at the same time spacing them so that none shall be nearer than 6 inches. Second, sometimes the runners cover the ground thickly on one side, and few or none on the other; therefore a part of them must be swung around when the case demands it. Third, if one plant sends out a great number of runners, and its neighbor on the other side but few, then the greater part of them should be swung around so as to fill up the space around the feeble plant. You can teach a boy to remember *one* thing pretty well; but when he has got to keep in mind, all at once, *three* things—namely, the path of the cultivator, keeping them 6 inches apart, and filling the vacant spaces, it is too much for him. A man or a pretty good-sized boy, and one who can keep his mind constantly on his work, is demanded for it. Oftentimes the plant has taken root before we get around; and if it has gone out at right angles, right in the path of the cultivator, it had better be moved. Now, pulling them up is not a good way. After a little plant has put out white roots, and got a good hold on the soil, it seems to be discouraged by jerking it out; and unless rain follows, the roots will not take hold of the new place. It is just as quick, and a good deal neater, to remove a little ball of dirt with the plant, by means of a common garden trowel. If, after all, the plants start too thick, and some of them *must* be taken out, do not do it by pulling them out nor by digging them out. Friend Terry has the credit of originating, if I am correct, a much quicker and simpler way. Slice off the top of the plant with a sharp garden trowel, just below the crown. If you cut too low you make unsightly holes in your strawberry-rows. If you do not cut *low* enough, the plant will start to grow again. With those who have only a few plants in the garden, there is no trouble about spacing them where you want them, as fast as they push out; but for field culture, getting the plants so as to

make a good stand over the ground and not be crowded is one of the main points; and it is something that costs quite a little labor, too, to have it done well. I mention these things now, because it is time to get right at it. With a favorable fall, we expect our plants to put out runners and make new plants for fully a month yet; and we also expect these new plants made in October to bear fruit next year. If they keep on pushing out and taking root clear into November, I am going to encourage them in it all I can. Our plants put out in August, with the transplanting-tubes, are also making some very handsome new plants.

EDITORIAL.

He paweth in the valley, and rejoiceth in his strength. He goeth on to meet the armed men.—Job 39:21.

We have at this date 10,112 subscribers.

THE two car loads of honey mentioned on next page have arrived in *excellent order*.

NAMES OF PARTIES THAT CAN FURNISH MOSS, AS MENTIONED ON PAGE 680. LAST ISSUE.

UP to the present date, only three names have been sent in; namely, C. H. Welch, Krumroy, O.; Christian Weckesser, Marshallville, O.; C. Gere, East Springfield, Pa.

THE BENTON CAGE.

As the essential features of the cage we have been using for the past season were borrowed from the above, we have decided to credit friend Benton \$50.00 for what the benefit his experiments have been to us.

INTERNATIONAL AMERICAN BEE-ASSOCIATION.

THIS will meet in Keokuk, Iowa, Oct. 29, 30, and 31, as will be seen from the convention notices, printed on page 711. It has been a rather bad year, and it is possible that some members may not feel able to stand the expense of attending this year. However, we hope there will be a large *local* attendance at any rate. Our friend C. P. Dadant has done some effective work, and his efforts will very likely make the attendance as great as heretofore.

LOOK OUT FOR THE GOLDEN BEE-HIVE.

OF course, our older readers will not need any caution, as it has been shown up again and again. Some of our younger ones have not, however, got thoroughly posted, as is evident from the following:

Can you tell me whether a man by the name of Jas. B. Pickert has any patent on the "Golden" bee-hive? He has sold a great many farm-rights through here for \$10.00. W. HINES.

Mt. Airy, N. C., Sept. 5.

You will remember that it is the Golden bee-hive men who have forged a testimonial from Prof. Cook; that is, they in their circular publish a testimonial from Prof. Cook, and yet he not only never used it, but he never *saw* a Golden bee-hive in his life.

BEE-CONVENTIONS: HONEY AT HOTELS, ETC.

SCARCELY ever have we attended a bee-convention when we found good honey at the ho-

tels, or the hotels where special rates have been made for bee-keepers. By way of suggestion we would recommend that the secretaries of bee-associations see that the hotels which are to accommodate bee-keepers be supplied with first-class honey, both comb and extracted. When bee-men go away from home, they ought to be treated to something as nice as they would have on their own tables. At the International, at Keokuk, in particular, we would suggest that Mr. Dadant, the secretary, procure samples of the finest alfalfa, mesquite, and white-sage honey, that can be obtained, both in the comb and extracted form, the same to be sold to the hotels granting special rates, at a reasonable price. If possible, let there be other samples of honey whose exquisite flavors are unknown to bee-keepers in general. It will be a grand time to have table-talks on the relative merits of the honey while the delicious article is melting with its sweetness in the mouth. If Mr. Dadant can not procure the mesquite and the alfalfa, as well as some of the white mountain sage, we will try to assist him. We make this suggestion public to Mr. Dadant in order that the smaller and affiliated associations may take the hint in time.

HONEY GETTING SCARCE.

IT is pretty evident, from quotations in the honey markets, that our product is going to become pretty scarce before another season; and while bee-keepers have suffered from a poor year, perhaps the price may rise to such a point where it can be held, even when honey becomes more plentiful; and thus a poor year may be a blessing in disguise. The fact that there is a big demand for honey, shows that the general public are learning to use it more and more as an article of food—if not the honey itself, in honey-jumbles and other baker's cakes. By the way, there is getting to be

AN ENORMOUS HONEY-JUMBLE TRADE.

Crawford & Taylor, the celebrated bakers of Mansfield, O., are actually using four barrels of off-grade honey daily in the honey-jumble business, and this is only one baking establishment. Not only are they making jumbles of honey, but other delicious cakes as well. Now, then, what bee-keepers have to do is to help these bakers all they can. Inquire for honey-jumbles at your groceries and baker shops. Buy some yourself, and invite your neighbors to try them. This will not only stimulate the honey-jumble business, but it will make a splendid outlet for off grades of honey. Say, Mr. Dadant, why would it not be a good idea to have a variety of honey-jumbles and other cakes made from our product, at the Keokuk hotels? Just include these in your bill of fare with the honey. Oh, yes! be sure to invite reporters to come in and take dinner with us, and then we will suggest the propriety of their using their pens in describing our delicious product.

THE A B C OF STRAWBERRY CULTURE.

AFTER a few sample copies had been sent out, we learned that there is already a book in print entitled, "How to Grow Strawberries." On this account we have changed the title of our book as per above heading.

SETTING STRAWBERRY-PLANTS IN THE FALL.

OUR good friend I. A. Wool, of Elsie, Mich., naturally felt a little bit hurt at friend Yoder's protest in regard to advertising strawberry-plants in August, for next year's fruiting. He writes us, however, that every customer of his is furnished with a little pamphlet, entitled, "The Secret of Success in Growing Small Fruits," and in his pamphlet occurs the following paragraph:

Plants may be set in August and September, and, if well cared for, will produce a fair crop of berries the following season. Some of our nicest berries are grown on this plan; and had we failed to set out a bed in the spring, we should by all means set it at this time, thus securing a supply of berries for the coming season. But as a rule we think it preferable to set in the spring, thus securing a full crop for the following season.

As the matter stands, I do not think there is very much danger of any of the readers of GLEANINGS being misled, either by the advertisement or by what has been written on the subject.

INFORMATION WANTED IN REGARD TO ALFALFA FIELDS.

ONE of our correspondents, Mr. O. R. Coe, of Windham, N. Y., not being able to winter his bees on the mountains, or, rather, to bring them through the spring months, proposes to move his apiary to some alfalfa field in Colorado. He has written to us for information; but as we are unable to give him very much, we have concluded to call upon some of our subscribers better situated to do so. In a letter received, he says:

I desire information as to honey resources, etc., of different places in alfalfa districts of the Southwest, especially along the line of the Arkansas River from Canon City, Colorado, to Garden City, Kansas. From all the information I can get thus far, I think Canon City the place, as there are thousands of acres of alfalfa there (yet more at Rocky Ford and other places), and it is the largest fruit-growing place, so far as I can learn, in the Southwest, and that would give an earlier flow of honey than places where only alfalfa is grown, would it not? I should like to know where the principal alfalfa districts are, and also where it is grown largely, and where fruit and other honey-blossoms abound.

O. R. COE.

Windham, N. Y., Sept. 15.

A letter directed to Mr. O. R. Coe, as above, will confer a very great favor on a fellow bee-keeper. Mr. Coe says he can winter bees until about March 1, and then he experiences the difficulties of spring dwindling during the long and backward cold weather upon the mountains, and usually loses the greater part of his bees. He proposes to try the experiment of sending a carload to the alfalfa regions, either this fall or very early next spring, hoping there-

by to put them in a locality where bees will not have to contend with the spring troubles, and may at the same time bring him remunerative returns in the way of honey. We shall watch his experiment with interest. Friend Coe will probably enlighten us upon the success or failure of his project.

SPECIAL NOTICES.

WANTED—GLEANINGS FOR MAY 1, 1890.

We will pay 10 cts. each for the above if sent at once. Now, be sure you do not send any other; and do not send any at all unless you can do it right now.

TWO CARLOADS OF HONEY EXPECTED DAILY.

We expect, before this number reaches our readers, to receive a carload of white-sage honey from L. E. Mercer & Son, of Ventura, Cal.; and, judging from the sample we received, we have a treat for those who want a fine article. This honey is whiter than any we ever saw gathered east of the mountain regions of the West. It is almost as white as water, and very thick. This sage honey is also remarkable for the length of time it will remain liquid. It granulates less than any other kind of honey we know of. A small sample mailed free. It is put up in 60-lb. cans, two in a case, and the price of from one to five cans will be 11 cts. per lb.; 3 to 10 cases, 10 cts. per lb.; 10 cases or more, 9 cts. per lb.

COMB HONEY.

We expect, about the same time, a carload of comb honey from W. K. Ball, of Reno, Nev. We have not had a sample of this, but are assured that it is equal to the sample he left with us nearly a year ago. That sample was no whiter than the whitest Eastern honey, but the body of the honey in the comb was so thick that it would hardly run, and the flavor was so mild and pleasant that it was pronounced by all who sampled it to be the best they ever tasted. This honey is gathered almost wholly from alfalfa bloom. When Mr. Ball wrote last, a few days ago, he said the bees were busy on the second crop, rolling in the beautiful honey at a good rate. This comb honey comes in cases holding 24 and 48 1-lb. sections each, the net weight being about 23 and 45 lbs. each, and there are 32 cases of 2-lb. sections, 32 in a case, weighing about 60 lbs. net. The prices will be as follows:

One to three 48-lb. cases, or one to six 24-lb. cases, 20 cts. per lb.

Four to eight 48-lb., or 7 to 15 24-lb. cases, 19 cts. per lb.

Ten or above 48 lb. cases, 20 or over 24 lb. cases, at 18 cts. per lb. Two-lb. sections at 19 cts. per lb., one or two case lots; 3 to 5 cases, 18 cts. per lb.; 6 or more cases, 17 cts. per lb.

There are also in this car of comb honey, 32 cases of extracted honey, which, judging from a former lot received from Mr. Ball, is extra fine. Price, same as the white sage.

THE DEMAND FOR HONEY.

We never saw any thing equal to the present demand for honey. We get daily upward of a dozen inquiries, and several orders. You will notice in the Honey Column that the commission houses report the market in a better condition than we have seen it for some time. We quote the following from the *American Bee Journal* for Sept. 20:

THE TUNE HAS CHANGED.

The Kansas City honey market report on page 637, says that "the demand for comb honey is larger than the receipts." Yes; and it is likely to be. Quoting it at 16 cents is a farce! Any white comb honey sold at retail for less than 25 cents per pound this year is sacrificed! Bee-keepers should demand that the very meager crop shall bring all it is worth. Chicago quotations are 18 cents, but that is too low. Hold on to the product.

The carload of honey from Arizona is all gone, but the No. 2 grade, which we offer at 1 cent per lb. less than price quoted on sage honey elsewhere. Samples mailed free. We have advanced our quotations, partly because of a better article, and partly because, in the present state of the market, it is worth more. We should be pleased to hear from bee-keepers who have not enough to supply their home demand, and all others in want of honey.

Wire Cloth.

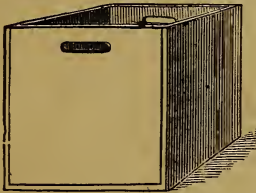
For door and window screens, tacking over hives and nuclei for shipping, making bee and queen cages, and a variety of purposes. We have the following list of green and black wire cloth which is not exactly first class, but is practically as good for the purposes mentioned, and at prices MUCH BELOW the ordinary price. You can no doubt select from this list a piece to suit your needs. Price in full pieces, 1½ cts. per square foot. When we have to cut it, 2 cts. In case the piece you order may have been taken by some one else before your order comes, please say whether we shall send the nearest in size, or cut one the size ordered at 2 cts. per ft., or give a second or third choice.

No. of Rolls, and Color.	Width, In's.	Length, Ft.	Sq. Feet.	Price of a Full Roll.	Pieces less than 100 ft. long. These figures are the number of square feet in each piece. Multiply by 1½ cents for the price of piece.
10 green	8	100	67	\$1.17	65, 65, 64, 63, 63, 62, 62, 61, 40, 33
25 green	12	100	100	1.75	44, green; price 77 cts.
2 green	16	100	133	2.33	
1 black	22	71	128	2.24	110 sq. ft., black; price \$1.92
5 green	24	100	200	3.50	140, 40, 30, 8, green; 300 black.
54 green	26	100	217	3.50	This is below reg. pr. of 1½ c.
14 green	28	100	233	4.08	224, 224, green.
7 green	32	100	267	4.67	133, green; price \$2.33.
10 green	34	100	300	5.25	304 black; price \$5.25
6 black	38	100	317	5.54	269, black; price \$4.70
5 green	38	100	317	5.54	258, black; price \$4.50
3 black	40	100	333	5.83	317, black; price \$5.54
8 black	42	100	350	6.12	350, green; price \$6.12
1 green	44	100	367	6.42	

A. I. ROOT, Medina, Ohio.

POTATO-BOXES

GALVANIZED BOUND.



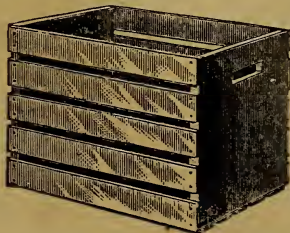
(TERRY'S).

These are made of basswood, bound with galvanized iron. The galvanized iron gives strength, and the basswood strength and lightness. These hold exactly a bushel when level full, and may be piled one on top of another. Al-

though they are made especially for potatoes, they can be used for fruit, vegetables, picking up stones on the farm, and a thousand other purposes. When piled one above the other, they protect the contents from the sun and rain; and from their shape a great many more bushels can be set into a wagon than where baskets are used. They are also much more substantial than baskets.

Price, nailed up, 25 c each; 10, \$2.25; 100, \$20.00. In the flat, including nails and galvanized iron, per pkg. of 1 doz., 2 nailed and 10 packed inside, \$2.10; 10 pkgs., 5 per cent off.

SLATTED POTATO-BOX



As the pieces of which the above are made are mostly from remnants of basswood used in making sections, we can furnish them nailed up for 20 cents each; 10 for \$1.85; 100, \$16.00. Material in the flat, including nails, in packages of 12 boxes each, at

\$1.50 per package, and each package includes two of the 12 boxes nailed up, complete. Ten pkgs., 5% off. Please be careful in ordering to say whether you want the galvanized bound or the slatted boxes.

A. I. ROOT, Medina, Ohio.

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.

JNO. VANDERVORT Laceyville, Pa

PASTEBOARD BOXES,

Or Cartons, for One-Pound Sections.



Bee-keepers are realizing more and more the value of these cartons for putting their comb honey in marketable shape. Other articles of home consumption are put up in a neat attractive way, and in shape to be handed to the customer, and carried safely without wrapping. Why not sections of comb honey, especially when the cost of the boxes is so low?

TABLE OF PRICES OF 1-LB. SECTION CARTONS.

Name or designation.	Price of 1	25	100	500	1000
1-lb. carton, plain.....	2	.30	.60	2.75	5.00
1-lb. carton, printed one side, name and address.....			.90	3.50	6.00
1-lb. carton, printed on both sides, name and address.....			1.00	3.75	6.50
1-lb. carton, with lithograph label, one side.....	3	.30	1.00	4.50	8.50
1-lb. carton, with lithograph label on both sides.....	3	.40	1.30	6.25	12.00
1-lb. carton, with lithograph label one side, name printed.....			1.30	5.25	9.50
1-lb. carton, with lithograph label, printed with name on both sides.....			1.70	7.25	13.50
Lithograph labels, 2 designs, for 1-lb. cartons.....			.35	1.60	3.00

If sent by mail, postage will be 2 cts. each; or in lots of 25 or more, 1 cent each. All the above have tape handles. Price, without tape handles, 6c per 100, or 75c per 1000 less. The quality of the boxes is fair, being made of strawboard, plated outside. If more than 1000 are wanted, write for prices.

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When more convenient, orders for Barnes' Foot-Power Machinery may be sent to me. A. I. ROOT.

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